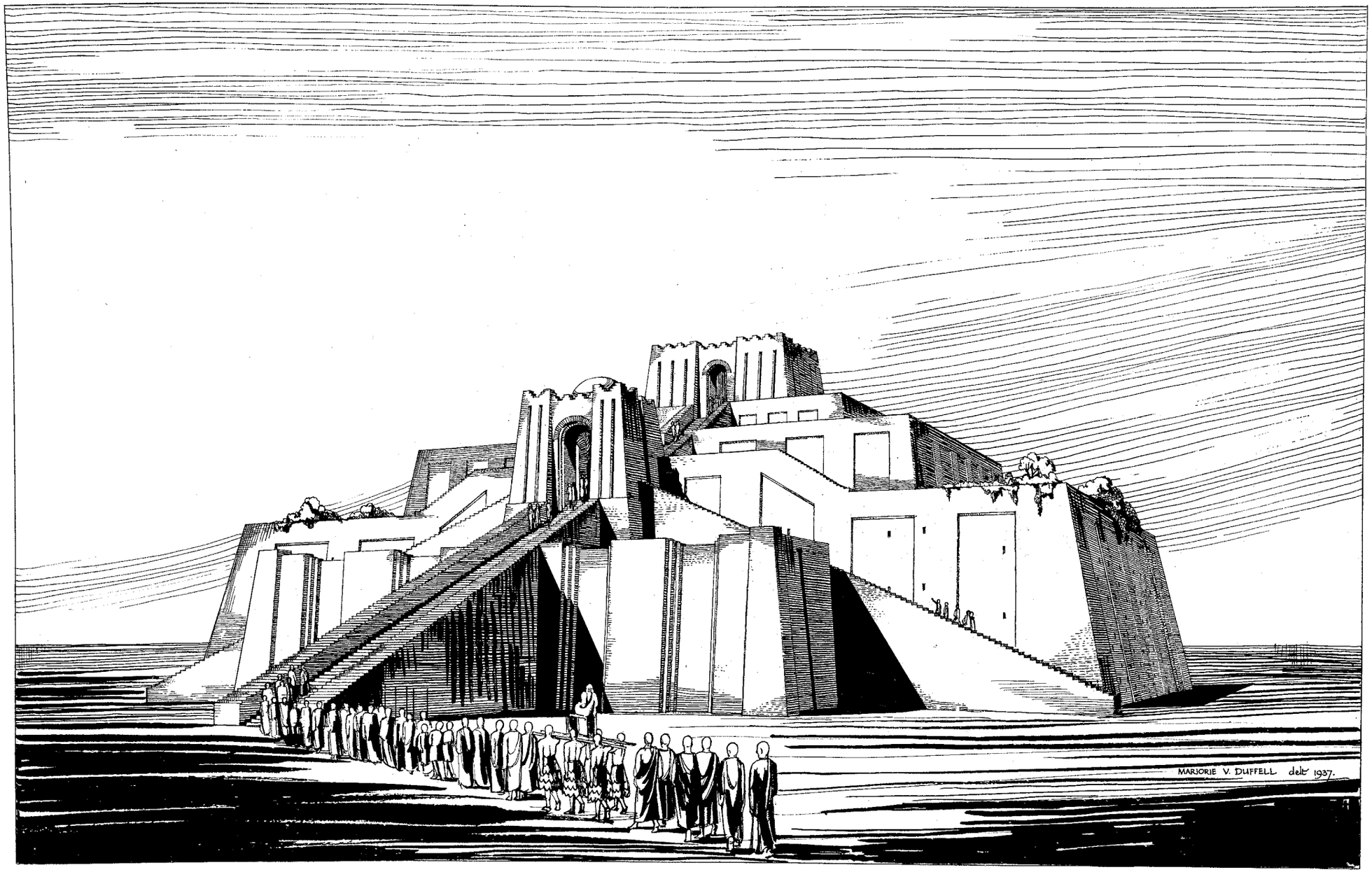
UR EXCAVATIONS

VOLUME V

THE ZIGGURAT AND ITS SURROUNDINGS



THE ZIGGURAT OF UR-NAMMU

Restored sketch; the temple buildings in the angles of the stairs are omitted from this reconstruction

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UR EXCAVATIONS

VOLUME V

THE ZIGGURAT AND ITS SURROUNDINGS

By

SIR LEONARD WOOLLEY

M.A., D.LITT., LL.D.

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INTRODUCTION

THE first work of excavation on the Ziggurat of Ur was carried out by Mr. J. E. Taylor, British Consul at Basra, in the years 1854–5; his is the credit for the discovery of the famous cylinders of Nabonidus which identified the ruins of Muqayyar with the Biblical Ur. Taylor's reports, admirable in themselves considering that he lived before the days of scientific excavation, were published in the *Journal of the Royal Asiatic Society*[1] and show clearly what he found; but his work was confined to the summit of the mound, he had no criteria whereby to distinguish the dates of different elements in the building, and his account affords no material for an attempt at its reconstruction.

In 1919 Dr. H. R. Hall cleared part of the south-east face of the Ziggurat, down to the floor-level of Nabonidus,[2] and demonstrated thereby the imperative necessity of excavating the best-preserved example of a Ziggurat in Mesopotamia. It was largely as a consequence of his work that the Joint Expedition was formed, and upon it were based the main lines of that expedition's programme.

An expedition financed by museums is bound, to some extent at least, to justify itself by the recovery of objects valuable from a museum point of view; work upon the Ziggurat was likely to have little but architectural interest and to be barren of objects, so that it was difficult at any time to devote an entire season to it. Consequently the examination of the great tower and its surroundings was spread over many years; it began in 1923, and from that date until 1934 there were only three seasons in which part of the time was not devoted to it. In 1923–4, while work was in progress at al-'Ubaid, Mr. C. J. Gadd and Mr. G. M. FitzGerald supervised the clearing of the south-west side of the Ziggurat, and later in the season the whole of the north-east front and part of the great Nannar courtyard were laid bare. In 1924–5 the north-west terrace, the 'Boat Shrine', and the Nin-gal temples were cleared; in 1926–7 more work was done on the south-west side of the Ziggurat, and the clearing of the Nannar courtyard was carried farther in that year and was completed by Mr. Mallowan in the two following seasons. In 1930–1 we began to investigate the archaic levels of the Ziggurat terrace, and in the next year brought to light the First Dynasty remains underlying the north-west half of Ur-Nammu's terrace, and in 1931–2 also we returned to the summit of the Ziggurat and probed beneath the remains of the Nabonidus superstructure to trace the upper elements of the Third Dynasty building; lastly, in 1932–3, the archaic levels under the south-east half of the Third Dynasty terrace were excavated, and our work on the Ziggurat area was finished.

Naturally, in work covering so many years, I have had the assistance of many helpers, to all of whom my thanks are due. I have mentioned Mr. Gadd and Mr. FitzGerald as working in 1923–4; in that year the architect of the

[1] *J.R.A.S.*, vol. xv, 1855.

[2] H. R. Hall, *A Season's Work at Ur*, pp. 168–9.

expedition was Mr. F. G. Newton, and the original ground-plan of the Ziggurat and the detailed elevations of its existing ruins are his work. In 1924 my wife joined the expedition staff and has been my chief helper in all subsequent seasons; in 1926 Mr. M. E. L. Mallowan joined us, and remained on the staff until the end of the season 1930–1. For the two seasons 1930–1 and 1931–2 Mr. J. C. Rose was the architect, and the ground-plan of the top of the Ziggurat and the sections of it are, together with other plans, due to him; in 1932–3 Mr. A. F. E. Gott was architect, working mostly on the archaic levels, and Mr. P. W. Murray-Thriepland was archaeological assistant. Mr. A. S. Whitburn, the architect in 1926–7, was responsible for the ground-plans of the Nannar courtyard as then excavated, and for details of the north-west terrace; others who have worked on the Ziggurat are Mr. J. Linnell (1924–5), Mr. P. J. Railton (1930–1), and Mr. R. P. Ross-Williamson (1931–2). To all of these I must express my gratitude for their help in the work, as also to Dr. L. Legrain and to the Rev. E. Burrows, S.J., who as epigraphists to the expedition at various times contributed that exact information as to dates and authorship of buildings without which I should constantly have been at a loss. During the whole of our time at Ur, Hamoudi ibn Sheikh Ibrahim of Jerablus was head foreman, assisted by his sons Yahia and Ibrahim and, later, Alawi. Of the photographs published in this volume the great majority were taken by Yahia, a few by myself, and two by the Royal Air Force, for whose help I am duly grateful.

In a volume which deals with the Ziggurat, its remains, and its reconstruction, it would seem natural to treat at length of the various attempts that have been made to recover the original form and proportions of the Sumerian staged tower, from the first essay by V. Place, based on his excavations at Khorsabad, to the long-accepted model of Koldewey and the repeated theses of T. Dombart, Axel Moberg, and E. Unger: further, it would seem necessary to check any views that may be put forward by reference to the George Smith 'Esagila' tablet on the one side and the description by Herodotus of the Babylonian Ziggurat on the other. If I have little or nothing to say about the views of former writers on the subject it is not because such were ill-considered or lightly to be rejected on the grounds which were then available, but because we are dealing here with a concrete example of a Ziggurat which presents us with facts quite different from those on which previous restorations could be based; if I do not submit all my conclusions to the test of the 'Esagila' tablet and of Herodotus it is because, in the first place, those refer to another building and we cannot be sure that all Ziggurats were alike, and secondly because they are not tests easy to apply with confidence. It is not certain that the 'Esagila' tablet is really a measured description of the shrine on the top of the great Ziggurat of Babylon; its actual dimensions indeed make this most unlikely. Koldewey himself, who relied entirely on this tablet and on the ground-plan of the Ziggurat at Babylon, which is all that excavation could recover, admits that the weak point in his reconstruction was the steepness of the profile, enforced by the fact that the temple was only eleven metres shorter than the base of the tower; since room had to be left

for the stages, the walls had to be practically vertical and the building could not have stood for any length of time. Now we know that the sides of a Third Dynasty Ziggurat, at least of that at Ur, which was contemporary with the Babylonian Ziggurat and identical with it in plan, sloped inwards at a sharp angle; with the Etemenanki base there literally could not have been room on the top of the tower for the temple described in the 'Esagila' tablet. As regards the description given by Herodotus, assuming that it refers to the 'Esagila' tower (which Delitzsch and Moberg both doubt, thinking that he may be speaking of Borsippa), it only refers, of course, to the tower as it was in the fifth century B.C.; 'Esagila' had been rebuilt by Nebuchadnezzar, and even if he retained the lowest stage, as Nabonidus did at Ur, yet the upper part need have had little or no relation to the original Third Dynasty building; consequently the attempt to harmonize the description of Herodotus with the actual ground-plan of the Ziggurat may be wholly mistaken and must in any case allow for such a complete change of design half-way up as we find at Ur; Moberg has rightly decided that 'the description of Herodotus cannot be applied to the tower whose ground-plan has been examined by Koldewey': that ground-plan was not laid down with a view to the erection on it of the superstructure which the Greek historian saw.

Circumstances in the past have driven the would-be restorers to try to reconcile an early ground-plan with a late literary tradition that cannot refer to the same original design; and further, the restorers were limited to a ground-plan. Two things, essential to their purpose, they were therefore unable to know, namely, the angle of the slope of the outer walls and the gradient of the stairs; on the former depended the area of the upper parts of the tower, on the latter the heights of the several stages and the total height of the monument. In all the reconstructions yet published the design is in these two respects utterly at variance with the data afforded by Ur; in the case of the Third Dynasty Ziggurat, of which we have not only the ground-plan of the base, but the outlines of the second and, approximately, of the third stage, the height of the main staircase is actually preserved and that of the upper stories can be calculated with a very small margin of error, and the result has nothing in common with either the 'Esagila' tablet or the account given by Herodotus. It is obvious that an early and a late Ziggurat might be very different things, and we now have material evidence to prove that indeed they were different. It is perfectly impossible to harmonize the remains of the Third Dynasty and of the Neo-Babylonian Ziggurats at Ur. The lower stage is the same, or virtually the same, in both, but the late superstructure disregards all the lines of the original; in the case of Ur-Nammu we must rely solely upon the actual remains, which fortunately are more complete than we had dared to hope; in the case of Nabonidus much less has survived and the reconstruction is more hazardous, but here we can fairly ask how far the description of Herodotus will apply to a contemporary building, and to some extent we may supplement the evidence of the ruins with that drawn from literary sources.

The ground-plan and sections of the existing remains of the two

superstructures are given on Plates 79–83; by them the reconstructions must of course be judged. Unfortunately Mr. Rose, who worked out these plans and sections in the field, was prevented by the pressure of other work from undertaking the task of restoration, which therefore devolved upon myself and Mr. Gott; the actual drawings of the restored plans and elevations, and the perspectives, are due to Miss M. V. Duffell; to both of them I am greatly indebted for the achievement of an intricate and laborious essay. I would also record my thanks to Mr. Sidney Smith and Mr. Gadd for suggestions made in the course of many discussions of the Ziggurat problem, to Miss J. Joshua, who has helped me to see this volume through the Press, and to the authorities of the University Press, Oxford, for the care which they have expended on my material.

I cannot conclude this introduction without expressing my gratitude to the Directors and Trustees of the British Museum and of the University Museum, Philadelphia, for their support of the field work throughout so long a period, and to the Carnegie Corporation of New York for their generosity in establishing the fund which provides for the publication of this and the other volumes of the Ur archaeological series.

CHAPTER I

THE ZIGGURAT TERRACE: THE EARLIER ARCHAIC BUILDINGS

BELOW the First Dynasty Ziggurat terrace lay the ruins of an older structure of similar character. The plan, so far as it was traced by us in the course of the excavations, was an earlier version of that of the First Dynasty, consisting of a massive wall retaining the terrace with a range of chambers along its north-east side and small buildings in the north and east corners which were obviously of the same nature as those which later replaced them. The interior buildings had been ruined down below their floor-level and only their foundations remained, re-utilized for the most part by the First Dynasty builders; such features therefore as doors had always disappeared, the rooms could contain nothing, and complete excavation was scarcely worth while. The whole of the north-west wall was followed, and the building-complex in the north corner was cleared in part completely, in part sufficiently to establish the lines of its ground-plan; the north-east face had been destroyed when the Nannar courtyard was enlarged and the upper terrace cut back for the purpose; in the east corner enough work was done beneath the First Dynasty level to show that the latter and earlier buildings were of one type (Plan on Pl. 67).

The north-west retaining-wall was of mud brick throughout, the inner face plain, the outer relieved by shallow buttresses 3·50 m. apart, six metres wide, and with a projection of *c.* 0·90 m., and was *c.* 9·00 m. thick between the buttresses; on the outside the true face is preserved to a maximum height of 2·20 m. The ground-level on the outside is given by a patch of bitumen paving in the first wall-recess from the north corner, which lies 0·60 m. below the bottom of the foundations of the stone wall of Archaic I and projects 0·40 m. beyond them; on the inside the floor-level is fixed by certain actual remains and, very distinctly, by the mud plaster on the face of the enceinte wall, which was of course taken down only to floor-level; there is a difference between the two of two metres, the terrace being raised that much above the area to the north-west. It is clear that in the First Dynasty period this interval was considerably reduced by the rise of the ground outside, even though inside the terrace floor itself was artificially raised by some 0·90 m., for the new outer ground-level ran over the top of the existing ruins of the projecting wall at the north corner of the Archaic II building, which is still standing nearly 2·00 m. high.

The greater part of the wall face has been cut back by the later builders who set their *kisu* of stone and mud brick against it, and only towards the north corner is it preserved (Pl. 1 *b*), but even here it has suffered. From the northernmost buttress there runs out a further projection which might be merely a secondary buttress designed to strengthen the angle of the whole

building, but the end of it is cut away, not an original face, and any addition would make it disproportionate to the other buttresses, nor indeed is the extra strength required by a wall already at this point nearly ten metres thick; farther along, where the next buttress comes, the break in the later stone face exposes Archaic II brickwork projecting beyond its expected line, and taking these two projections in relation to the patch of bitumen paving between them, which is more suitable to the interior of a room than to the open area at the foot of an outer wall, one is driven to the conclusion that a double wall enclosing intramural chambers ran out from the terrace side to the north-west; either this was the frontage of a low-lying walled area north-west of the Ziggurat, as to which we know nothing, or the double wall presently returned to the north-east and formed the west corner of the Nannar court-yard below the Ziggurat front; the limits of the courtyard in the early periods are not known, but it is quite possible that they exceeded those of the Ziggurat terrace.

The destruction of the north-east face of the building makes certainty on the point impossible. Narrow chambers running north-west by south-east bordered the Ziggurat court and beyond these walls ran north-east, much destroyed by the trench cut here by builders of Kassite times, but still traceable to and under the foundations of the Kassite walls, so that there had been a second series of chambers within the enceinte wall proper, but the latter had vanished altogether, and it is only by analogy with the First Dynasty building that it can be restored as on the plan. On the south-east side the wall ran inside that of the First Dynasty, which was set forward to effect an enlargement of the terrace—its remains were found under the pavement of the First Dynasty service court: on the south-west the outer face had perished, but a short stretch of its inner face was laid bare near the west corner.

The terrace floor lay from 0·65 m. to 0·95 m. below that of the First Dynasty (neither is quite regular, so that the interval differs at different points) and is constructed, as are the floors of the chambers, of a layer of fine clay laid over a mud-brick packing 1·30 m. thick which in its turn rested on a 0·25 m. thick bed of clay nodules; the top of the latter was 0·70 m. to 0·80 m. above the bottom of the foundations of the internal walls.

The building in the north corner of the terrace is clearly the prototype of that of the First Dynasty, the only real changes being that in the later version the central court is enlarged to include the room to the north-west of it by the simple omission of the party wall and that the tiny recess-chambers have been contrived almost in the wall thickness behind the furnace-rooms: it must be remembered that of the Archaic II structure only the foundations remain and they were probably much more solid than the walls which rested on them, so that the minor differences apparent in the ground-plans may in the superstructures have been much modified. In the middle chamber on the north-east remains of a furnace showed that the functions of the two buildings had been the same.

In the east corner of the terrace the old walls were found immediately underlying those of the First Dynasty service court on the north-west and

south-west sides (Pl. 5 *b*), and in the same way the outer wall of the late room JJ (the façade of the building) and both walls of room CC were based on the old walls; without therefore pushing excavation farther it could be proved that the boundary walls of the building were identical and the interior arrangements at least generally conformed with those of the later version. No deep work was done on the site of the six shrines of the First Dynasty terrace, and we do not know whether an earlier parallel to them existed. To the north-east of the shrines it was found that the old inner wall of the terrace had been trimmed down 0·95 m. below the level of its floor to make a footing for the new: the only explanation of this is that the old wall, lying as it did towards the edge of a high terrace, had been ruined or weathered down on a slope of something like one in three and to afford a proper foundation had to be cut evenly to the level of its existing top along its outer face; otherwise the First Dynasty builders would have started their work at the old floor-level as they did elsewhere. The interest of this is that it implies a complete destruction of the Archaic II building and (probably) its desertion over a considerable time prior to its rebuilding in the First Dynasty.

In the west corner of the terrace there was found running parallel to the NW. enceinte wall a mud-brick wall, poorly constructed, with a sharply battered face and behind it an earth packing topped with two courses of mud-brick paving, which implied a raised platform 1·00 m. high separated from the terrace edge by a sunken passage; what the reason for the platform may have been there was nothing to show. The wall of it was not bonded into the enceinte wall and its foundations rested on the terrace floor, so that it was definitely of late construction: its bricks measured *c.* 0·19 m. × 0·11 m. × 0·05–0·06 m. and were of light sandy clay set in greenish mud mortar: the floor bricks measured 0·22 m. × 0·12 m. × 0·06–0·07 m. and were of greenish clay set in reddish mortar; see Pl. 13 *b*, 'Archaic II B platform'.

Since no objects were found in the building, and no inscriptions, its date can only be approximately fixed by the character of its brickwork, which is curious and illuminating, for it includes a variety of brick types such as is not found in a single structure on any other site.

On the outer face of the north-west enceinte wall, in the first metre from the bitumen-covered floor up, the majority of the bricks are plano-convex and measure 0·26 m. × 0·24 m. × 0·11 m., but mixed with them are a certain number of rectangular flat-topped bricks of two sizes, 0·34 m. × 0·21 m. × 0·11 m. and 0·37 m. × 0·37 m. × 0·09–0·10 m. respectively; from 1·05 m. to 1·70 m. the bricks are so slightly plano-convex that they should properly be termed flat-topped, and measure 0·37 m. × 0·21 m. × 0·09–0·10 m.; above them there is a very slight break in the wall-surface marked by an over-hang of the upper courses which, however, would be effectually concealed by the mud plaster (it is not enough to denote a difference of date in the construction), and thereafter the bricks are plano-convex, measure 0·21 m. × 0·14 m. × 0·07 m., and many of the courses are laid herring-bone fashion. Farther along on the same wall-front there is a complete alternation of the types, first a course of bricks plano-convex and measuring 0·23 m. × 0·15 m., then

one of bricks flat-topped and measuring 0·27 m. ×0·27 m. (?) ×0·11–0·12 m., then one of bricks plano-convex and measuring 0·20 m. ×0·13 m. ×0·06 m., and above that a course of slightly plano-convex bricks 0·22–0·23 m. ×0·15 m. ×0·10 m.; elsewhere there are found flat-topped bricks 0·37 m. ×0·22 m. × 0·10–0·12 m. and 0·25–0·26 m. sq. ×0·12 m. On the inner face of the same wall four types of flat-topped bricks could be distinguished, viz. 0·37 m. × 0·22 m. ×0·10–0·11 m., 0·34–0·35 m. ×0·21 m. ×0·10–0·11 m., 0·22 m. × 0·16 m. ×0·085 m., and 0·19–0·20 m. ×0·13 m. ×0·07 m.; the plano-convex bricks were strongly rounded above and measured 0·19–0·20 m. ×0·13–0·14 m. ×0·06 m. rising to 0·075 m. The bricks used as a bedding to strengthen the floors were always of this last plano-convex type, and where the enceinte wall is preserved above floor-level along the north-west limits of the terrace it is built exclusively with the same—at floor-level the wall-face is set back from the line of its foundations and there are some signs of its having had shallow decorative buttresses like the wall of the First Dynasty, but the face is so weathered that the point must remain doubtful.

In the south-east enceinte wall (of which part of the top was laid bare) there were noted bricks virtually flat and measuring 0·37 m. ×0·22 m. ×0·10–0·12 m., and others 0·22 m. ×0·16 m. ×0·07 m., and very markedly plano-convex bricks measuring 0·20 m. ×0·13 m. ×0·07 m. max. and 0·19–0·20 m. × 0·12 m. ×0·045 m. at the edges, rising to 0·07 m. in the middle. In the internal walls the majority of the bricks are of the strongly marked plano-convex type, 0·20 m. ×0·13 m. ×0·07 m., but with them, and especially in the lower courses, there are flat-topped bricks of the 0·37 m. and 0·34 m. sizes, or 0·35 m. ×0·21 m. ×0·09 m.; the plano-convex bricks are often set in herring-bone fashion. On the floor-packing of one of the chambers was found a single burnt brick, very slightly plano-convex, 0·165 m. ×0·105 m. × 0·04 m.

Most of the wall-bricks were of fairly clean material, but those of the floor-packing contained many sherds of painted al-ʿUbaid pottery; the packing was well done, with the bricks in regular courses, but comparatively little mortar was used; this mud mortar was extraordinarily rich in al-ʿUbaid potsherds.

The mixture of brick types is, as I have said, without parallel elsewhere. It is to be noted that the flat sorts are employed only in the lower parts of the foundations, the superstructure apparently having been built consistently with bricks of a strongly plano-convex shape. There is no possibility of explaining this as due to successive reconstructions because courses of the different types alternate, flat bricks being found above the plano-convex, nor can it be due to the re-use of old material, as is often true where burnt bricks are concerned, because it is extremely difficult to extract a single mud brick intact from its place in a wall and to extract them in any number would be out of the question. The flat-topped type is definitely older than the plano-convex, and some of those found in the building are by their measurements characteristic of the Jamdat Nasr period; the plano-convex brick is an innovation of the period immediately succeeding Jamdat Nasr. It follows that our Archaic II Ziggurat terrace was constructed when the plano-

convex bricks were first coming into use, but the builders had still by them stocks of the old-fashioned bricks which they did not want to waste and could safely employ in those parts of the building where they would never be seen; in short, the terrace dates from the very beginning of the 'Plano-convex' or Early Dynastic period.

It is quite possible that the use of the plano-convex bricks and the insertion of quantities of al-'Ubaid potsherds in the brickwork may be connected. The same use of potsherds has been noted at other sites in the case of buildings belonging to the beginning of the Early Dynastic period,[1] and it cannot be an accidental phenomenon. If the brick-makers dug deeply enough for their raw material they would be quite likely to come on a stratum in which al-'Ubaid pottery fragments were very numerous, but mud so mixed would be unhandy for moulding, and as a matter of fact the bricks contain relatively few sherds—those are almost all in the mortar, or rather, since the mortar is so sparingly used, they would seem to have been put in separately after being sifted out from the brick-earth. They must have been scattered over and between the bricks for some good reason, but they serve no practical purpose. If, as is possible,[2] the introduction of this unwieldy type of brick was an expression of the revulsion of feeling against the foreign Jamdat Nasr rule, nationalism would have found a much more natural expression in placing under temple floors a deposit representative of the oldest indigenous culture.

ARCHAIC PERIODS III AND IV

A cut made in the west corner of the Ziggurat terrace brought to light two walls, or rather, an older wall (Archaic IV) and a later revetment added to it (Archaic III); they ran at a different angle from that of the subsequent Ziggurat platforms and had been cut away at either end by the builders of Archaic II. The older wall had a sharply battered face and was undoubtedly the retaining-wall of a terrace; it was built of flat-topped unbaked bricks measuring 0·23 m. ×0·10 m. ×0·10 m., of clean red clay set in lighter red mud mortar; these are the 'Riemchen' which at Warka are characteristic of part of the Uruk period. The revetment was of bricks 0·20 m. ×0·085 m. × 0·085 m., made of a mixture of grey clay and ashes. Both walls stood to a height of *c.* 2·20 m., and on the low level at their foot was a brick pavement.

Behind the walls there stretched a pavement consisting of mud, or of a course of mud bricks made of a mixture of grey mud and rubbish set in light red mortar; the measurements of the bricks were difficult to ascertain, but they seemed to be 0·23 m. sq. ×0·07–0·08 m. The pavement lay 0·30 m. below the foundations of the (late) Archaic II B platform wall, and on the north-west it had, like the outer walls, been cut away by the Archaic II enceinte wall of the terrace; it lay 2·80 m. below the bed of clay nodules which were the base of the Archaic I courtyard floor. The floor (Pls. 11 *b*, 13 *b*) was littered with thousands of clay cones for wall mosaic; none were in position, so that either the entire decoration had been intentionally broken

[1] e.g. at Warka; *Ausgrabungen in Uruk 1930/31*, p. 20.

[2] See *Ur Excavations*, vol. iv.

up or, as is more likely, the surface of the walls to which it had been attached had disintegrated during a relatively long period of neglect. The cones were of several sizes, most being 0·08–0·09 m. long, diam. 0·015 m., the blunt ends painted red or black or left the colour of the clay, others 0·11 m. long, diam. 0·025 m., others 0·13 m. long, diam. 0·03 m., the last having a slight depression in the blunt end; they lay most thickly near the face of the Archaic II north-west wall and about half-way between its west corner and the façade of the temple kitchen. The brick pavement was not found over the whole area, but survived only in patches, and in many places the cones rested on mere earth packing.

Between 0·20 m. and 0·40 m. below the level of the small cones there was found—not uniformly, but in patches—a floor-level of crumbled limestone; on it lay large clay cones for mosaic, 0·18 m. long, with deeply hollowed ends 0·07–0·08 m. in diameter (Pl. 14 *b*). A few such cones were found against the back of the brickwork of the older 'Riemchen' wall and actually below the top of it, but there they seemed to be merely filling a hollow, and they lay as much as 0·70 m. and 1·00 m. below the level of the small cones; the limestone floor did slope down from south-east to north-west, but the position of these cones, especially as there was one of the small cones with them, seems to be due to the accidents of the destruction of the terrace edge and they cannot be taken as evidence of its original level.

At Warka the evidence of stratification shows that the large hollow-ended cones are earlier in date than the small pencil-like variety (see *Ur Excavations*, vol. iv); it is natural to regard the former as an advance on the hollow conical pots embedded in the walls of the Anu Ziggurat at Warka and a half-way step to the fine cone mosaics of the columned hall of the Uruk age.[1] Here we have two definite levels associated with the two types respectively, and while it is impossible to assert that the floor with the large cones is that of the terrace supported by the older 'Riemchen' wall and that that with the small cones belongs to the period in which the revetment was added—for the points of contact are missing, thanks to the denudation of the wall-tops—yet this is most probable. It would seem that there are here remains of an older terrace, the terrace of a Ziggurat of the Uruk period, differently orientated to those of later times. In the Eanna Ziggurat at Warka there are changes in the orientation which do not quite correspond to these at Ur, but are at least reminiscent of them.

With the smaller cones there were found disks of black and green stone, diam. 0·022 m.–0·03 m., the front smooth, the sides slightly conical, the rough back loop-pierced for attachment by copper wire (U. 17858); some lay lower, and almost at the level of the larger cones. They were never found near the large cones, so cannot have been centres set in the cone's hollow end, as at first seemed likely, but were independent wall-ornaments. There were also found with them numerous copper nails *c.* 0·022 m. long (U. 17857).

Against the foot of the revetment wall (Archaic III) there lay a number of very small ring beads of white shell and dark steatite, U. 17856.

[1] *Ausgrabungen in Uruk 1930/31*, Taf. 2 b, Taf. 1.

CHAPTER II

THE ZIGGURAT TERRACE: THE FIRST DYNASTY BUILDINGS

The Terrace Wall.

THE First Dynasty Ziggurat is completely buried beneath that of Ur-Nammu, and no attempt to excavate it was made: it stood, however, in a walled terrace enclosure of which the entire plan has been recovered (Pl. 66).

The boundary wall was followed on its outer face along the north-west side from near the north corner for a distance of some 40·00 m., where it had been ruined by the builders of Ur-Nammu's terrace wall. On the north-east side it had been completely destroyed by the setting back, in the Third Dynasty period, of the great Nannar courtyard, and survived only in the narrow space between the south-east wall of that court and the north-west wall of E-nun-maḫ. On the south-east it was much ruined and the face had been destroyed by builders of the later *kisus*, but we were able to recover it on either side of the two gateways and at one intermediate point. On the south-west, near the west corner, the junction of the First and Third Dynasty brickwork could be traced, but it is highly probable that the old work had been cut back by Ur-Nammu's builders and that the original wall thickness was greater than is shown on our plan. Of the inner face practically the whole of the north-west wall and most of the south-east wall were consistently followed; of the north-east wall only the east corner was preserved, of the south-west wall only the two angles were excavated.

The wall is (on three sides at least) 11·00 m. thick, built of plano-convex mud bricks measuring 0·21 m. ×0·14 m. ×0·07 m. and 0·25 m. ×0·17–0·19 m. ×0·08 m.; embedded in the back of it was found part of a burnt brick, flat-topped, measuring 0·19 m. ×? ×0·07 m. It is built over and in front of the old wall: against the face of this is a filling of bricks carefully laid and occasionally with matting between the courses, but with very little mortar; the facing, in which the mortar is liberally used, is so far distinct from the core that the back of it presented a quite good face; it would seem that the facing was built independently and the filling-courses laid *pari passu*: where there were buttresses in the older wall the new facing is sometimes carried straight across them and the filling dispensed with, so as to produce a set-back in the more complicated line of the new construction. Against the face of the new mud-brick wall, which was in places mud-plastered and in places left bare, there was built a masking-wall of limestone rubble set in clay mortar. The stonework, which was more or less preserved for a distance of 20·00 m. (see Pl. 1 *a*), had a maximum height of six or seven courses, 1·10 m., fairly well maintained, and was generally from 0·60 m. to 0·70 m. thick, i.e. it had the width only of a single stone backed where necessary by small stones or by mud; the corner-stone in the second buttress ran back for 0·90 m.

and was in contact with the mud-brick wall-face, but not bonded into it. In spite of this independent construction the stone and brickwork was all contemporary. The first break in the line, where a projecting member has been hacked back, shows a cut face of brickwork resting on a single course of stone alined with that on either side: where the stonework is intact and stands highest there is on the top of it brickwork identical with that of the wall's core which comes to within 0·40 m. of the frontage of the stones and, having there no true face, must originally have come farther forward, presumably to the face line. Had the stone been an independent revetment added later, it would have done little to increase the area of the terrace and nothing to strengthen the retaining-wall—indeed, there would have been considerable risk of its breaking away from it; but the fact of the brickwork being carried over the top of the stone shows that the latter is of the same date and was in the nature of a foundation-course such as we find in other buildings of the same date, e.g. the First Dynasty temple at al-'Ubaid.[1] Here it is too thin to serve any practical purpose, and since it was heavily plastered with clay it would have been indistinguishable from the brickwork above and therefore served no decorative end; it can only be a survival of what had once been a genuinely structural system[2] now reduced to a religious tradition. This explains the peculiarities of the method of construction. The workmen were little accustomed to handling stone for building and they had to economize a costly material; they therefore built the brick wall first, up to the height of 1·10 m., bringing it to a true face; against this support the single course of stone was added, the rough blocks being by so much the easier to balance, and as soon as the top was level with the brickwork the next brick courses were laid consistently over the whole.

Let into the stonework were found fragments of two burnt bricks, so slightly plano-convex as to be almost flat, 0·165 m. × ? × 0·05 m. (Pl. 1 *b*), and where the stonework had been removed there were found, apparently *in situ*, burnt bricks 0·24 m. × 0·16 m. × 0·06 m. Bricks of Ur-Nammu and two of his terrace wall cones were found against the ruined stone facing, and it was perfectly obvious that the destruction was due to his workmen who were cutting back the old terrace edge to make room for their own foundations; the complete disappearance of the wall-face after the first twenty metres may well be due to there having been here a projection corresponding to that in the Warad-Sin edition of the terrace which lay in the line of the Ur-Nammu work and was therefore entirely removed (Pl. 2 *a*).

The cutting back by the same workmen of all projections, even at the north end of the wall, makes the restoration not quite certain. Between the broken end of the wall near the north corner and the definite recess 19·50 m. away there are two places where the mud brick projects, breaking the line of stone facing; on the plan these are restored as buttresses, but there is the possibility that they were branch walls. If they were walls they would introduce into the plan an entirely new feature and give a different conception

[1] *Ur Excavations*, vol. i, Pl. xxiv.

[2] A real stone foundation of a temple of the Uruk period is found at Warka: see *Ausgrabungen in Uruk 1930/31*, p. 16.

of the function of the enceinte wall and of the whole building; but the two facts (1) that in the first projection from the corner there is a stone course running under the brickwork, and it is unlikely that stone would be taken right through the thickness of a subsidiary wall, and (2) that the stone face, which is complete between the two projections, implies an outer wall and would be out of keeping with an internal room-wall, justify the restoration put forward in the plan.

The same stone face was found against the only bit of the north-east wall that is preserved, though in the late trench which had destroyed most of it many of its limestone blocks were found. In this wall there must have been the main entrance to the terrace, corresponding to that which in later times led up to it from the Nannar courtyard. In that courtyard a few remains of plano-convex brick construction flush with the Third Dynasty pavement would suggest that the level was the same in both periods, in which case there would have been in the First Dynasty virtually no rise from court to terrace. A monumental gateway is implied, but every trace of such has been swept away, and the restoration given on the plan (Pl. 66) is purely hypothetical.

On the south-east side the ground-level outside the enceinte wall was the same as that of the terrace inside; the wall has in consequence suffered more than that on the north-west, which was protected by its depth, but two or three courses of brickwork remain and by the jambs of the eastern gate (see p. 15) enough of the limestone to show that its construction was the same. No buttresses could be distinguished. The almost complete destruction of the walls east of the entrance was due to the fact that a watercourse had cut diagonally across the site and had scoured away all building remains down to the First Dynasty floor-level, so that the outlines of the inner court could be traced only by the floor-edges.

The second entrance on the south-east side was a long passage with white-washed floor and walls running through the thickness of the wall, slightly wider at its outer end but thereafter narrowed to one metre, which was the width of the first entrance also. At its outer end (Pl. 2 *b*), against the north-east wall and extending across the width of the entry, were the ruins of a hinge-box built of plano-convex bricks of the flat type measuring 0·24 m. × 0·155 m. mixed with small lumps of limestone, standing 0·60 m. above the original floor-level; its construction had involved damage to the north-east wall. In the box stood the copper shoe from the hinge-pole of the door, 0·13 m. in diameter and 0·60 m. long (the top missing); its existing rim came 0·83 m. above the floor, but a thin line of whitewash running through the filling of the passage at the same height seemed to represent a second floor which this door may have served. The door then belongs to the period of reconstruction (cf. the high mud floor of the court in front of the six shrines, p. 23), but it was probably a reproduction of a similar feature in the old work. The passage, which was followed throughout, led into a guard-room of which the mud-brick walls were preserved to a height of between 0·50 m. and 0·60 m. and showed some traces of lime-wash. The floor also had been

lime-washed; at 0·30 m. above it there had been a later floor of red clay laid over clay nodules, and in connexion with it the walls had been repaired and re-whitewashed. Against the north-east wall was an altar of burnt brick overlaid with bitumen, which at the back was carried up for 0·10 m. against the wall-face and in front was brought down over the brickwork and taken outwards in a curve over the floor for a distance of 0·15 m.; here the bitumen was 0·18 m. above the older whitewashed floor and connected with the red clay floor of the reconstruction period. In the top of the altar there was a bitumen-lined hollow 0·50 m. in diameter set back 0·20 m. from the front edge and 1·20 m. from the south-east wall. A door in the south-west wall led into a very narrow chamber, its walls plastered with reddish clay but not whitewashed, its floor of clay laid over clay nodules; the walls stood to 0·30 m. only, but at 0·80 m. above the floor and presumably resting on the core of the old walls there could be distinguished other walls of very poor quality, built of plano-convex mud bricks of which some courses were laid herring-bone fashion; these stood to 1·30 m. above floor-level and were presumably connected with the same reconstruction as had been noted in the entrance-chamber. Just inside the room were found numerous fragments of clay jar-stoppers with seal-impressions (U. 18553, *Ur Excavations*, vol. iii, nos. 541–7), farther along there were many large clay balls, obviously missiles, and at the south-west end smaller clay balls and sling-bolts: this was clearly an armoury attached to the guard-chamber and shows that the Ziggurat terrace enclosure had its military side as the inmost line of the city's defences. A second long, narrow store-chamber continued the line of the first up to the south corner of the terrace.

A door in the north-west wall of the guard-room, facing the entrance-door, led to the Ziggurat terrace. This was floored throughout with smooth reddish clay laid over a bed of rough lumps or nodules of the same fine red clay as is used for making tablets, the whole having a depth of from 0·40 m. to 0·50 m. Actually the floor material was of much better quality than the bricks of the walls, and where the latter were ruined down to floor-level (as was often the case in the building complex in the north angle of the terrace) it was more easy to secure the ground-plan by cutting into the walls and following the well-defined edges of the floors than by attempting to follow the walls themselves.

This part of the terrace was really a separate courtyard bounded on the north-west by the side of the Ziggurat, on the south-west by the buttressed inner face of the enceinte wall, on the south-east by the wall of the store-chambers, buttressed to match the enceinte wall, and on the north-east by the façade of a small temple-like structure, also buttressed, which was continued to the north-west to enclose the sixth of a range of shrines opening on to the staircase court of the Ziggurat. To the south-west of the entrance there stood out in the open court a circular base of burnt bricks set in bitumen (Pl. 3 *a*), raised one course high above the floor. On the floor were found the cylinder seals U. 18587 and U. 18590, *Ur Excavations*, vol. iv. Pl. 61.

The South-east Temple Kitchen.

A door set between two buttresses in the south-west wall of the court led into a narrow entrance-chamber (JJ) having one door in its north-west wall and one in the north-east, the latter not facing the entry, but well to one side of it. The room had been almost entirely destroyed by the builders of the Third Dynasty well, who had driven across it a deep trench whereby they approached the well pit; of the main doorway only the inner corner of the south-east jamb was left. The walls showed traces of whitewash, the floor was of clay. The north-west door led into a very narrow store-room (HH) lying at right-angles to the entrance-chamber, which was filled with a deep deposit of ashes; it presented no features of interest. The north-east door opened on FF, the central courtyard of the building.

FF. A large court about 12·00 m. ×6·00 m. with a clay floor which had been several times relaid; the last floor was whitewashed, as were the walls. There were six doorways, two in the north-east and south-west walls, one each in the north-west and south-east walls. In the east corner, against the south-east wall, was an altar built of burnt and mud bricks (Pl. 3 *b*); at its south-west end was a step of burnt brick below and mud brick above, height 0·45 m., the top mud-plastered; on it two burnt bricks had been set upright on end against the south-east wall as if to protect the wall surface. The altar itself consisted of three courses of burnt brick and then mud brick to a total height of 0·95 m.; in the top course there was an edging of burnt bricks along the side above the step; behind this edging was a shallow bitumen-lined depression 0·90 m. long by 0·70 m. wide, and along the north-west side of the altar was a bitumen-lined runnel set back 0·30 m. from the edge and with its bottom some 0·20 m. lower than that of the main depression; most of this was broken away. Against the south-east wall of the court a row of three burnt bricks set at 0·55 m.–1·30 m. from the corner may be the remains of a raised base. All the burnt bricks were of one type, measuring 0·24 m. ×0·16 m. and of medium convexity. In the south corner two courses of burnt bricks built into the whitewashed wall at 0·30 m. above floor-level and projecting slightly beyond the wall-face may be evidence of reconstruction.

Against the south-west wall, between the two doors, there were found in a layer of ashes one large truncated triangle of shell, a smaller triangle and two rectangular pieces of lapis-lazuli cut for inlay, a (headless) limestone figure in relief of a kneeling man wielding a paddle (?), U. 18309 (*Ur Excavations*, vol. iv, Pl. 86), also a piece of inlay from such a frieze as that of the al-'Ubaid temple, and a part of a clay jar-sealing with a guilloche seal-impression, U. 18310 (*Ur Excavations*, vol. iii, No. 550), two fragments, fitting together, of carved grey steatite making the wig of a large inlay figure, U. 18314 (*Ur Excavations*, vol. iv, Pl. 99), and other fragments apparently from a beard of a similar figure, U. 18313 on the same Plate; a minute wig in steatite, U. 18338, was found towards the west corner of the room (see loc. cit., Pl. 56), and close to it a small steatite amulet in the form of a tortoise, U. 18352, loc. cit., Pl. 56; and, also on the

floor-level, a single bead of carnelian, pear-shaped with stem and calyx of gold, U. 18347, and on the top of the south-east wall a handle (?) of gold, U. 18324, loc. cit., Pl. 60. A fragment of a white calcite bowl with an inscription of Rimush (U. 18308, loc. cit.) lay higher up in the soil, above the ashes and at the bottom of the mixed stratum of broken brick and rubbish below the Third Dynasty pavement, and has nothing to do with the archaic building.

The other rooms on the south-west, south-east, and north-west sides of the court were all narrow store-chambers and presented no features of interest. Room KK had been ruined down to floor-level by the builders of Ur-Nammu's water-cistern; its floor was covered by light ash which also ran over the wall-top on the south-east and south-west sides at 0·80 m. above floor-level. Room GG had been so denuded by the watercourse running over this part of the site that its outlines could only be traced with difficulty. In the room were found a clay seal-impression, U. 18311, *Ur Excavations*, vol. iii, no. 549, and U. 18335 (see vol. iv), a copper bolt with gilt head. Room CC was better preserved, its walls standing to a height of 0·85 m., on them a secondary coat of rough plaster over the older whitewash bearing witness to repairs and reddened by heat; over the 0·40 m. thick clay floor was a deposit, filling the whole room, of twenty-one alternate strata of light grey ashes and mud, very regular and strictly horizontal, but the mud not firm enough to have been a floor; this continued up to a height of 0·60 m., then came a thicker layer of brick earth and above it a more irregular layer of black ashes; the last two seemed due to destruction of the building, the lower to have been a gradual accumulation during its lifetime; indeed, the mud had the appearance of having been water-laid. In the ashes was found a cup of rough reddish clay, Type RC. 7 a.

The most interesting rooms were those opening out of the court on the north-east where, in a temple, a sanctuary or twin sanctuaries might have been expected. They had wide entrances in the middle of each of which was a small pillar of brick and clay (Pl. 4 *a*); room DD had its floor (0·20 m. above that of FF) reinforced with large fragments of pottery—sherds from a ribbed vessel—laid flat and coated with clay (Pl. 5 *a*), and above this, to the height of the much ruined walls, was a bed of wood ash; the earth under the pot-fragments, the clay above them, and so much of the walls as stood above floor-level were burnt to a deep red. Room EE was entirely occupied by a circular furnace; this consisted of a clay ring which was 0·45 m. wide where it cut off the room corners, but ran into the walls so as to be there only some 0·10 m. wide; between the corners and the outside of the ring was about 0·60 m. The inside of the ring was floored with fine fire-clay which had been often repaired, as many as ten layers being distinguishable (Pl. 4 *b*), each from 0·03 m. to 0·06 m. thick, the top floor being 0·60 m. above that of the court FF; into the top floor a small subsidiary fireplace, a sunken circle diam. 0·85 m., had been cut just behind the pillar in the entrance. In the corners of the room were piles of light grey wood ash and burnt straw; some of the floor surfaces were black, damp, and oily. Both

the rooms were furnace-rooms; the front entrances, partly blocked by the central pillars, were scarcely suitable for stoking and were probably for draught; the back wall of the building was ruined below floor-level, so that it was impossible to say whether there had been stoke-holes through it, but the presence of large quantities of ashes in the service-court behind (BB) makes this likely.

The East Service Court.

Behind the building just described, in the east corner of the Ziggurat terrace, lay an open court (BB) which had no obvious connexion with the building;[1] it was entered by the gateway in the south-east enceinte wall and by a door in Shrine A to be described later. The north-west and south-west walls were tolerably preserved, except that the north-east end of the former had been cut away by a later excavation; the north-east and south-east walls were almost entirely denuded and could be traced only with difficulty. They had been heavily mud-plastered (plaster 0·15 m. thick) and had been whitewashed, as had the floor in a rather early stage in the life of the building; the whitewashed plaster curved out from wall to floor and gave a level below that of the main floor cleared by us; the north-west wall went down 0·90 m. below the floor and rested on the mud-brick wall of the Archaic II building. The main floor, which lay 1·20 m. below the pavement-top of Shrine C, and 0·65 m. below that of the kitchen building, had a top dressing of smooth reddish clay 0·15 m. thick, then layers of darker clay, red and greenish clay totalling about the same thickness, and then a bed of clay nodules resting on a packing of mud brick. On the surface were numerous patches of discoloration due to burning; against the south-west wall, near its middle, was (Pl. 5 *b*) a layer of burnt bricks and bitumen, 1·80 m. wide, rising 0·20 m. above the whitewashed floor which continued below it, a reinforcing of the floor or possibly the remains of a pavement of larger extent; patches of bitumen without brick were found near the north-west wall, to the east of the causeway, and in the east corner; in the south corner the whole surface was covered with bitumen which was carried up in a roll against the wall-surface and sloped gently to the mouth of the drain running beneath the entrance passage; a bitumen coating laid over clay is very perishable, and it is probable that such did at one time extend over the entire court, but had been largely worn out and destroyed before the collapse of the building, while much of what survived the building's destruction had been swept away by the watercourse.

Towards the centre of the court was a circular basin of burnt bricks and bitumen, sunk in the floor, but with its rim raised above it; it was 0·50 m. deep with an inside diameter of 0·80 m. at the top diminishing to 0·45 m. at the bottom, which was flat; the sides were horizontally grooved by the brick courses, heavily coated with bitumen, but very rough. The maximum outside diameter was 1·60 m., and on the north-east side where the top was preserved the bitumen lining was brought up to a curved ledge beyond

[1] The possibility of stoke-holes has been mentioned; the end walls of rooms CC and GG were destroyed to floor-level, so that their evidence was not conclusive, but there do not seem to have been doors in them.

which was a runnel *c.* 0·15 m. wide, concentric with the basin, enclosed on the outside by a single line of bricks coated with bitumen; this deepened towards the north and was covered in by two bricks laid across it; the outer border was flat and smooth and coated with bitumen (Pls. 6 and 65), which was carried down on the outside over the part of the brickwork which stood above floor-level and outwards over the floor's surface.

Against the north-east wall there was a circular base (Pls. 7 *a*, 65) consisting of two courses of burnt bricks set in bitumen mortar and thickly covered with bitumen; it measured 4·50 m. in diameter and the bricks were laid radially, with a certain amount of irregularity, as here and there headers took the place of the normal stretchers; it was smooth on the top and the bitumen was sloped down the sides in a curve and taken out a little way over the clay floor, and it was clear that there had never been more than two courses. (On the east half of the base the bitumen cover had been destroyed and a cut had been made here into the brickwork, removing all bricks as far as the centre.) Against the north-east side of the circle was a brick platform in the shape of a truncated triangle built of bricks two courses high set in mud mortar which ran right up against the face of the enceinte wall; both the circular base and the platform rested on the clay floor and had no further foundation. To the west of this, close to the sunken basin, were the remains of a second circular base of which the greater part had been destroyed by the late excavation, which had also cut away the north-west wall of the court; only the south-east segment remained, about 1·15 m. wide, of what had been a circle with a diameter of 4·00 m. Here there was no brickwork, but the base had been modelled in clay and thickly coated with bitumen which sloped gently down at the edges and was carried out for a distance of 0·15 m. over the floor; it was between 0·10 m. and 0·15 m. high, but owing to the distortion of the clay under pressure the surface was very uneven. On it lay five burnt bricks, but they were not *in situ*, and it was clear that there had never been any built superstructure (Pl. 6 *a*).

Between the sunken pit and the causeway, and as far as the ruined circle, the floor was covered to a depth of 0·10 m. by a mass of light grey wood ash; there was no proper fire-place, but marks of burning on the floor showed that a fire had been lit here. Between the brick circular base and the south-east wall of the court there was a much heavier bed of ashes covering a larger area, but no signs of an actual fire could be distinguished, and it looked as if the ashes had simply been heaped there.

Diagonally across the court, from the back wall of Shrine A to within about 5·00 m. of the entry passage, ran a raised causeway of burnt brick (Pl. 7 *b*). The mud-brick wall of the shrine was ruined down to floor-level, but on its line, 0·25 m. above the level of the existing shrine pavement, were the remains of a single course of burnt bricks which, in spite of having no longer any regular outline, could only be explained as the raised threshold of a doorway. Immediately below this (its top 0·35 m. below) came the burnt brickwork of the causeway, here three courses high and 1·80 m. wide, the bricks set in bitumen (above its ruins here was found a fragmentary archaic seal-

impression, U. 18253). At 0·80 m. from the wall it broke away, but was continued by broken bricks and fragments of intact brickwork, giving the original south-west face between points 0·90 m. and 2·00 m. and between 3·65 m. and 9·00 m. from the wall-face, while the north-east line was preserved from 5·70 m. to 9·00 m.; where it was best preserved the mass had two courses set in bitumen and a third in mud mortar, but most of the structure had been pretty thoroughly destroyed and the bricks from it were strewn everywhere. Although this resembled the solid pavements of the neighbouring shrines it differed from them in not being contained by walls of mud brick; not only was there no trace of mud building, but where the masonry was preserved loose bricks lay touching its side (which could not have been the case had mud walls existed), and towards the south corner a mass of lime and wood ash lying 0·55 m. above the brickwork and running downwards to the north-east covers the ruins and proves that they are undisturbed; but here, though there is plenty of decomposed mud brick fallen from the courtyard walls, there is no sign of building against the burnt brick mass. This, therefore, has to be regarded as a raised causeway.

The causeway stops at a distance of 5·00 m. from the passage entry in the south-east wall, and a very little way from its end there begins the sloped bitumen floor-covering which leads to the mouth of a drain running below the passage. The drain, built of burnt bricks, stands at the passage entrance to a height of 0·25 m., but it had to be roofed over (the roof has gone), so we must allow for the passage floor a height above the court-level of at least 0·45 m. This drain is contemporary with the causeway; the bricks of the latter measure 0·23–0·24 m. × 0·16 m. × 0·05 m. at the edges, with a maximum thickness in the middle of 0·07 m.; they are therefore moderately convex; in the top of each is a single thumb-print frog-hole; the bricks of the drain measure 0·23 m. × 0·15–16 m., and at the drain outlet the bricks are bonded into the rough stonework of the wall face. The bitumen cover of the court floor in the south corner was also contemporary; it was older than the white-washed floor, which had been laid over the top of it; along the south-east wall there was a line of burnt brick rubble 0·10 m. high and 0·40 m. wide over which the bitumen was carried up so as to form a skirting which would protect the wall footings from water lying on the court, and this skirting curved inwards to make the drain entrance, which was 0·75 m. wide, with rounded corners, and after 1·25 m. from the intake narrowed down to 0·30 m.; constructionally, then, the bitumen floor was part of the drain. The causeway, at its highest point, against the north-west wall, is only three courses, and that leaves some 0·28 m. of the mud-brick wall-face exposed between the top of the causeway and the course of burnt brick forming the door threshold; that this was originally exposed seems unlikely, in view of the general solidity of the construction, and as the upper courses were set in mud mortar (only the two lowest, which would be exposed to water lying in the court, being in bitumen), their destruction would be easy, and the quantity of scattered bricks is sufficient to account for one or two extra courses; at least one can assume some extra courses at the north-west end, making steps

down from the door in the wall to the general level of the causeway top, but even the latter may well have had a rather greater height than the ruins indicate. But the brickwork must have come definitely to an end before reaching the stretch of bitumen, and there was, therefore, a gap of five metres between the end of the raised causeway and the beginning of the passage through the wall which, as it ran above the drain, was also raised to about the same height above the level of the court; the only possible connexion between the two (and a connexion is necessary) was a wooden bridge across the gap. There cannot have been steps down to the court and up again to the passage, for (*a*) there would have been evidence of the latter, whereas in fact the bitumen surface showed nothing of the sort, (*b*) steps would have blocked the drain entrance, and (*c*) the presence of the bitumen in front of the drain's mouth means that there would have been plenty of water in the court, as is further indicated by the bitumen mortar in the lower courses of the causeway, and it is inconceivable that the elaborate raised walk should only lead down into a puddle.

The only difficulty about the reconstruction is that the raised causeway divides the courtyard into two parts and seems to afford access to neither and to prevent communication between them. At the distance of two or three metres from the south-east end of the causeway there were found on the clay floor bricks which lay outside the lines of the causeway, but were parallel with it and might be in position; the evidence did not amount to proof, but it did suggest that here the passage might have been widened by steps on either side of it leading down to courtyard level; that is certainly the most reasonable supposition.

The Drain.

At its entry the south-west side of the drain stands three courses high; each course was laid dry and then bitumen was sluiced over it and smoothed down over the inner face of the bricks; the bitumen on the top of the third course bears the mark of another brick which once rested on it, and this slopes inwards at an angle of about 30 degrees, showing that the drain was covered with a true arch in brick up to the inner face of the enceinte wall. The drain bottom slopes gently towards the exit. Where its channel narrows there is against each of the masonry breasts a small cup-like hollow in the bed lined with bitumen; the meaning of these I do not know. At its exit the brickwork of the drain sides, jambs 0·80 m. wide, were incorporated with the stonework of the wall-face (Pl. 8) and with the mud brick of the upper part of the wall; the channel emptied over an 'apron' of brickwork heavily coated with bitumen which protected the wall footings and seems to have let the water disperse in an open earth-cut ditch. At a somewhat later period this was found unsatisfactory, and over the apron there was built, with bricks and bitumen, a rectangular open basin 0·10 m.–0·15 m. deep which sloped sharply to the south-east and had an outlet in its lower south-east side from which a second bitumen-lined channel 0·20 m. deep led the water downhill; that the channel was open is shown by the fact that the bitumen, carefully rounded over the top of the brick sides, is on the outside taken down for 0·07 m. only and then flattened out over the surrounding earth; of the basin, which lies higher, the south-west side was heightened by bricks set on end which are left rough on the outside and therefore must have been covered by the earth; from the exit of the drain, therefore, there was a sharp slope of the soil down to the south-east, and it is this natural slope that is followed by the drain channel. At a later stage again there was a slight modification of the system, the basin being narrowed by a line of bricks coated with bitumen laid against the inner face of its north-east border, while the outlet to the farther channel was raised by a single brick course so that the basin, instead of being a free passage, acted as a catchment.

Through the thickness of the wall the drain sloped sharply, but the passage above it must have

been on a level; consequently the outlet of the drain was much loftier than its intake. Of the jambs six courses now remain, and these are all laid flat and show no trace of the beginnings of the arch springers; they have also been seriously hacked about by later builders. For during the period that the courtyard in the corner of the terrace was in use the drain was twice completely remodelled.

The second drain starts by utilizing the channel-base of the first, only the brick sides being raised; it begins not at the wall-face, but at a point 4·80 m. inside it, and as the outer face of its brickwork is left rough it must here have been underground and the floor of the court must have been raised at least 0·45 m. The fact that the bricks fallen from the causeway lie below this level and that a rise of 0·45 m. or more would bury from sight the circular bases and the sunken basin in the court means that the remodelling of the drain was part of a wholesale reconstruction which obliterated all the features of the court now recognizable; such minor modifications of the court as the laying of the whitewashed clay floor over the original bitumen coating of the south corner may be associated with the alterations remarked in the original drain outlet, but with the remaking of the drain we have a new phase in the history of the building of which no other evidence remains.

The new channel, which is 0·60 m. wide and stands, near the wall-face, to a height of 0·45 m., has no sign of any roof; it is possible that the stretch inside the court was open, but if it was covered that would require a greater raising of the floor-level than has been postulated above. It is built partly of re-used bricks (generally broken pieces sometimes with part of the bitumen mortar still sticking to them) taken from the old drain or from the causeway, partly of new bricks which measure either 0·27–0·28 m. × 0·16 m. × 0·05 m. or 0·24 m. × 0·18 m. × 0·04–0·05 m. and are of the flattest type of plano-convex bricks and have no thumb-marks in the top. It is less sharply sloped than the old drain, so that at the exit its floor is 0·60 m. higher, and it here projects beyond the wall-face and empties on to an apron of bitumen spread over a single course of bricks of the new 0·27 m. × 0·16 m. type; the outlet is only 0·35 m. wide, and the three courses of the jambs which remain are laid radially and are the springers of an arch which when complete was 0·35 m. high.

At a still later time there was a fresh reconstruction. The drain had been blocked by infiltered mud and the arch had collapsed or been destroyed; a new channel base of bricks with little or no bitumen was laid over the mud and the sides were carried up in new brickwork of inferior quality, the bricks being many of them old ones re-used, but some of a new type 0·30 m. long and quite flat. The outlet is 0·75 m. above that of the second period (1·35 m. above the original) and is 0·48 m. wide and 0·55 m. high; mixed with the bricks in the jambs are rectangularly trimmed blocks of bitumen from 0·30 m. to 0·50 m. in length and 0·25 m. wide × 0·085 m. and the opening is covered with capstones of undressed limestone (see Pl. 8 *a*); the outlet projects 0·85 m. beyond the old wall-face, but is roofed to its end; some remains of greenish-coloured mud brick against the north-east jamb and above the capstones seems to show that there had been a thickening of the enceinte wall at any rate at the drain mouth. The drain emptied merely on to the ground—there was no channel in continuation of it and no apron, and the discoloration of the soil showed that the ground had been swampy or soaked by stagnant water.

Against the north-west wall of the courtyard, close to the north-west end of the causeway, there were traces of a mud floor 0·16 m. above the existing top of the brickwork; this would mean a raising of the court-level which might be contemporary with the construction of either of the two later drains. A clay label, U. 18280 (*Ur Excavations*, vol. iii, No. 540), and a bitumen mace-head, U. 18294 (*Ur Excavations*, vol. iv, Pl. 28) were found in the courtyard.

The Six Shrines (Pl. 10, plan on Pl. 66).

It can safely be presumed that there was an entrance to the Ziggurat terrace in the north-east wall, corresponding to the front stairs of the Ziggurat itself, though of this no trace could be found, thanks to the removal of the enceinte wall for the enlargement of the Nannar courtyard and to the fact that the inner wall lay below the Third Dynasty Ziggurat staircase and therefore could not be followed to the point where a door might be expected. This inner wall, however, was found on either side of the supposed entrance and made the restoration more than probable, for it allows of a central entrance-chamber flanked by long magazines (guard-rooms or stores for

weapons) such as are usual in Sumerian architecture. The inner door led to the terrace proper whereon stood the Ziggurat. The tower does not lie in the middle of the terrace, but from the main entry it appeared to do so, for to the north-west and the south-east there stood buildings precisely equidistant from the sides of the Ziggurat and from the entrance-door, seeming to enclose a court to which the tower was central. The two blocks of buildings, however, were very different in type; that to the north-west was a variant of the 'temple kitchen' described above, that to the south-east was a row of separate chambers opening on to the court which were probably shrines of subordinate deities.

Excavation in the south-east part of the court, that bounded on two sides by the Ziggurat and on the others by the inner wall of the terrace and by the frontage of the six shrines respectively, showed that a later floor (to be described on p. 23) extended over the whole area; 1·00 m. below it came the First Dynasty floor, several times repaired, resting on the characteristic bed of clay nodules going down for 0·65 m.; the floor of Archaic Period II lay 0·90 m. below that of the First Dynasty. The top of the Archaic II wall had been trimmed down to just over half a metre below floor-level to make a good foundation for the First Dynasty wall, which was considerably thinner. The First Dynasty floor, which in the neighbourhood of the buildings showed signs of having been whitewashed, in front of the doorway of Shrine A, was overlaid with a roughly rectangular patch of bitumen 4·80 m. square, which is curved up against the face of the north-east wall and at its north-west limit is raised into a definite roll with a sharp edge on the outside, the clay floor being taken up against this; it slopes fairly sharply to the south-west. Immediately in front of the door is, above the bitumen, a single course of brickwork making a rectangle 2·00 m. across and serving as a bottom step from the doorway; this reinforcement of the floor is paralleled in the entrance of the north-west temple kitchen and is obviously due to the room having been used as a passage and therefore having had much traffic through it. Elsewhere, in front of the other shrines, there was no bitumen covering, but the clay floor shows two distinct surfaces, the upper being due to repairs of the older surface.

In the filling above the court near the door of Shrine D was found a broken shell plaque engraved on one side and re-used and carved on the reverse, U. 18251, *Ur Excavations*, vol. iv; near the door of Shrine A, in the upper filling, was a folded fragment of gold foil, U. 18236, and farther to the north-west, near the north-east wall of the court, were two other gold fragments, U. 18225, a thin bar rectangular in section, and U. 18226, a strip bent as if to form an edging (see loc. cit., Catalogue).

The shrines are all of one pattern. The walls are of mud brick of very poor quality, so bad that the exact measurements of the bricks could not be determined; the side walls were 2·35 m. and the front wall 2·20 m. thick, and the width of the chambers averaged 3·00 m. The floors were of burnt brick and were astonishingly solid, being fourteen or fifteen courses thick; of these the lower six or seven were set in bitumen mortar and the upper in clay,

and a thick coat of bitumen was spread evenly over the surface: the pavement level was thereby raised 0·85 m. above the floor of the north-west court and access was made easy by three steps (average heights 0·30 m., 0·25 m., and 0·30 m. respectively) built of brick and plastered, both treads and rises, with bitumen (Pl. 9 *b*). The bricks are strongly plano-convex, measuring 0·23 m. × 0·15 m. × 0·04 m. at the edges, increasing at the centre to 0·065 m.

Shrine A. The upper courses of the pavement had been removed and only six remained, of which five were set in bitumen and the uppermost in mud mortar; the walls were ruined down to the same level. In the south corner were a few bricks surviving from the seventh and eighth courses, and also against the north-east door-jamb; only the lowest step remains, but it is clear that the present condition of the room is due to its having been plundered for the sake of the bricks, and the original floor-level was presumably the same as in the other shrines. If so, there must have been steps in the south-east doorway also, leading down to the causeway, where now only a single line of burnt bricks is left on the outer edge of the wall to mark the threshold, these lying flush with the top of the denuded floor inside. The use of the room as a passage differentiates it from the other five, but constructionally it appears identical.

Shrine B. The walls are ruined down to floor-level. The pavement consists of fifteen courses of burnt brick, all, apparently, laid in mud mortar; the top step is overlaid with bitumen which runs back 0·90 m. from the edge of the tread and then breaks off in a fairly straight line, and the rest of the floor-surface is of rough brick; but between the pavement and the side walls there are trickles of bitumen and a few drops of bitumen show here and there between the bricks; there must have been, therefore, further courses of brickwork and a top-dressing of bitumen, and the present condition is due to the same systematic plundering as has removed a greater proportion of the pavement of Shrine A. As the bitumen spread over the brickwork would not trickle down very far between the joints, it is not necessary to assume that more than two courses have disappeared (Pl. 9 *a*).

Shrine C. Except for a hole dug into the middle of the floor towards the north-east side the pavement is well preserved; the edges were not exposed and so the exact number of courses was not ascertained, but they were not less than fifteen in number; the top was thickly covered with bitumen, as were the rise and tread of the top step, but the lower steps were in plain brick (Pl. 9).

Shrine D. The pavement was fourteen courses thick and overlaid with bitumen, well preserved except that it had been cut across (through its upper courses) by the slanting trench cut for the convenience of the builders of the Third Dynasty well. As in Shrine C, the upper step, tread and rise, is bitumen-plastered, but the lower two are plain; the lowest tread (owing to the pavement being less thick than usual) is flush with the clay floor of the court; the middle step has been damaged and two courses are missing (Pl. 9 *a*).

Shrine E. The pavement is well preserved except for the east corner which had been cut away by the well-makers' trench. The north-west end, lying under the foundations of the Third Dynasty Ziggurat, could not be excavated.

Shrine F. The pavement, covered with bitumen, was well preserved; the north-west end was not excavated; number of courses in the pavement not ascertained, but the level approximately that of Shrine D. The walls destroyed down to floor-level.

Across the doorways of the shrines ran the wall of mud brick which bounded the later 'Second Dynasty' mud floor; its foundations were 0·80 m. above the First Dynasty floor, and its bricks, moderately plano-convex, measured 0·20 m. × 0·13 m.

On the north-west side of the Ziggurat staircase was a court precisely similar to that on the south-east side in front of the six shrines, similarly floored. Of the north-west guard-room only part of the south-west wall was preserved, running over a wall of Archaic Period II, and from this fact and from the correspondence between the older and the later chambers to the north-west it was safe to restore its north-west wall also on the foundation of Archaic II. The floor of the chamber, 1·00 m. thick, of mud over a packing of broken mud bricks, ran over the top of the older parallel wall to the north-east, so that the chamber was wider than that of Archaic II and presumably

matched exactly the guard-chamber to the south-east of the main entry. Against the inner face of the surviving south-west wall were found fragments of shell inlay engraved with a scale pattern, some scales in outline, the lines filled in with black paste, the central row champlevé and wholly filled in with red (U. 17625, *Ur Excavations*, vol. iv, Pl. 100). The north-east part of the chamber, with its outer wall, had been cut away by a deep excavation made for the widening of the Nannar courtyard and the erection of its new boundary wall; bricks of Ur-Nammu and of Larsa date filled the excavation, which was bounded on the north-east by the Neo-Babylonian court wall built over the remains of the Kassite wall of the same structure; here, then, nothing of the old work could be recovered. Beyond the guard-room to the north-west lay three long parallel store-rooms communicating with each other; these occupied the north corner of the terrace area. There was nothing to show how they had been entered, whether from the guard-room or from the end rooms (8, 9, 10) of the north-west temple kitchen, the dividing walls in each case being ruined down below threshold-level; but since the kitchen complex is complete in itself, access to the store-rooms from the guard-chamber is perhaps more plausible. Nothing was found in these rooms, of which only the south-west ends, with the doorways, were preserved (Pl. 11 *a*).

The gap between the (old) Ziggurat and the south corner of the temple kitchen led into a courtyard which extended from the north-west face of the Ziggurat to the north-west enceinte wall and from the south-west enceinte wall to the temple kitchen's façade. The floor was of red clay laid over the usual bedding of clay nodules; the walls were relieved by shallow buttresses (Pl. 11 *b*). Close to the north-west wall and about at its middle were remains, in burnt brick and bitumen, apparently of a circular base like that in the corresponding court on the south-east side of the Ziggurat, and a little way from this a rough hearth of brick partly sunk in the floor. In the middle of the court at a depth of 1·20 m. below the floor-foundation of clay nodules there was found the lower part of a large pot of red clay containing quantities of beads, two copper razors, and a mirror (?), two miniature toilet-vases in white calcite, two calcite seals in the form of lions' heads, and calcite figures of a man, a seated bull, a calf, and a dog (U. 17832–17841, see loc. cit., Pl. 85). Not far away, but on the floor-level, was found the engraved shell plaque, U. 2826, see loc. cit., Pl. 86.

The North-west Temple Kitchen (Pl. 64).

A doorway in the south-west wall facing on the courtyard gave access to the building. Against either door-jamb was an impost-box to take the frame of the door, and on the inside there was also an impost-box against the north-west jamb showing that at one time at least the door had been double. Through the entry and across the room and through the door in its north-east wall on into the central court (2) ran a curious pavement of brick and bitumen. The original floor had been made thus: three courses of unbroken burnt bricks set in bitumen had been laid along either jamb-face in each doorway, and the bitumen was plastered over them and across the centre

so as to make a sort of trough with raised sides and slightly convex middle; across the room it was merely spread over the clay floor. When the surface was worn out repairs were effected by laying circular logs against the walls over the old runnel sides, laying above them a single course of brick fragments and then covering the whole with bitumen as before to produce the same runnel-like effect; when this in its turn wore out the process was repeated (over a bed of clay 0·18 m. thick) with brick fragments set in mud along the walls and coated with bitumen: the process can be clearly seen in the photographs on Pl. 12, taken when the rotten mud brick of the walls had been dug away and the edge of the pavement exposed showing its stratification. The imposts of the outer door belonged originally to the first period of paving, but were reproduced in the second, the bitumen being carried carefully round them (see Pl. 12 *a*); in the second period also the bitumen was taken outside the door and carried across the face of the jambs in a roll as far as the buttress on the north-west and to a corresponding point to the south-east. The only explanation of this feature is that it was intended (*a*) to strengthen the floor in view of heavy traffic, and (*b*) to protect the footings of the door-jambs from water; it would follow that there was a likelihood of water being spilt here and, since such precautions are not usual, that in the case of this particular building water was constantly being carried through the door into the central court.

Room 1. Inside the door, near the south-east jamb but a little way away from it, was a solid square of brickwork, two courses high, apparently a base or support; the bricks were burnt bricks, plano-convex, 0·23 m. ×0·15 m. × 0·07 m. maximum. In the north corner of the room was the impost already described. Over the whole floor was a particularly heavy bed of black wood ash. The bitumen of the passage widens out considerably as soon as it passes the doorway, and instead of having its sides brought up runnel-fashion, its surface is slightly convex, and water spilt on it would simply run down to the clay floor; I can only suggest, in view of the apparent contradiction of this with the doorway features, that water might be spilt through the vessels being bumped against the walls in the narrow entries, whereas there was small risk of that happening in the open. Embedded in the wall-plaster behind the impost against the north-west jamb of the entrance-door was a copper pot, handled but of uncertain shape; it was empty.

Room 2. This was the central court and although provided with a clay floor only was probably unroofed. Against the north-west wall was a rectangular trough or box (Pl. 13 *a*) made of burnt bricks (0·20 m. ×0·16 m., plano-convex) and bitumen; it measured 1·55 m. ×0·80 m. and was 0·55 m. deep; the bitumen formed a rough lining to the inside, was brought in a curve over the edge, sloping down on the outside and then spreading over the clay of the floor; along the north-west edge, against the wall, there ran a channel in the bitumen 0·15 m. wide and *c.* 0·05 m. deep, sloping down from north-east to south-west; the wide rim on the south-east side was also slightly concave and may have served as a second runnel. In the box, at 0·25 m. below the level of its rim, were two cups of drab clay, Type RC. 4 b, and four

of Type RC. 67; below them came mixed soil containing fragments of another cup and another Type RC. 67 vase, remains of matting, and the broken and scattered bones of small animals and fish scales; the filling seemed to have been disturbed. The 'box' may have been an altar, but perhaps it was merely a sort of sink used for the preparation of food. Over the south corner of the box, 0·30 m. higher up, there was a roughly square patch of paving in burnt bricks (measuring 0·24–0·25 m. ×0·16 m., slightly plano-convex with a single thumb-print frog or a long, narrow frog) about a metre across; to the south it was continued in a mixture of brick fragments, clay and bitumen. The bricks were blackened and the clay reddened by fire and over them lay a bed of ashes *c.* 0·10 m. thick. Almost at the same level, but lying on the top of the bed of ashes which spread over the brick patch, there was in the middle of the room a circle of burnt bricks (mostly broken plano-convex bricks, but some flat, 0·28 m. ×0·17 m. and 0·385 m. square) with remains of mud brick above, looking very much like a column-base. The brick patch certainly belongs to a reconstruction of the original building, the circle may well be the substructure of something of later date; close by it and at the same level lay a broken copper dagger, U. 17658 (later in date); two broken spear-heads (U. 17659) lay 0·50 m. to the north-east of it, but on the First Dynasty floor, and must be contemporary with it.

Room 3 contained no features of interest. *Room* 4 had facing its entrance a 'box' of burnt brick and bitumen resembling that in the central court; it lay beneath the foundations of the Third Dynasty Ziggurat and had been much destroyed by its builders; it was 0·75 m. wide, 0·20 m. deep, and of unknown length. *Room* 5 and the small recess (10) beyond it had no features of interest.

Room 6 was entirely taken up by a circular hearth edged with a ring 0·45 m. wide of plano-convex mud bricks set on edge; inside this was a mass of ashes and cinders and the bricks of the ring were deeply reddened by the heat.

Room 7 had round its walls a lining of mud bricks, four horizontal courses and two laid herring-bone fashion, forming a square hearth almost as large as the room; the bricks were burnt a deep red and the fire-clay floor had been constantly repaired, as many as thirteen distinct layers being traceable, of which the lowest rested on the normal bed of clay nodules. The two rooms 6 and 7, therefore, were furnaces exactly like those in the corresponding building on the other side of the Ziggurat.

The walls of the building for the most part followed the lines of and rested on those of the Archaic II structure, but sometimes were separated from them by a layer of mixed rubbish; where they followed independent lines their foundations were shallow and rested on broken brick and earth.

In the bricklaying it was usual to have at the base of the wall five horizontal courses, then three courses set slantwise on edge, three horizontal courses and three of bricks slanting in the opposite direction to those below, then horizontal courses again, and so on. The burnt bricks used in the building were only slightly plano-convex and as a general rule measured 0·24–0·25 m. ×0·16–0·18 m. ×0·055–0·060 m. at the edges, increasing in

the centre to 0·07–0·08 m.; some had a single thumb-print frog, some a long, narrow frog, and some no frog at all. Exceptional sizes have been recorded above. The mud bricks were more markedly plano-convex and the usual measurements of those in the internal buildings were 0·20–0·21 m. × 0·14–0·15 m. × 0·09 m. in the centre and *c.* 0·055 m. at the edges; they usually had a single impressed frog-hole. The mud bricks of the enceinte wall measured 0·25 m. × 0·18–0·19 m. × 0·08 m.

INTERMEDIATE REMAINS

In the angle between the north-east face of the Ziggurat and the south-east side of the central staircase there were scanty remains of a building intermediate in date between Ur-Nammu and the First Dynasty of Ur.

The debris of the Ur-Nammu structures rested on a packing of red clay some 0·40 m. thick which had been the foundation of that king's work; into it had been cut the foundations of the Neo-Babylonian 'Boat Shrine'. Immediately below the packing and 0·15 m. below the foundations of the 'Boat Shrine' was a pavement consisting of two or three courses of mud bricks for the most part of a slaty-green-grey tint measuring 0·23 m. × 0·20–0·21 m. and slightly plano-convex, set in and overlaid with a red mud mortar (a few of the bricks were themselves reddish). The pavement was traced over the greater part of the area defined above and on the south-east ran up against a wall which alined with the south-east face of the Third Dynasty Ziggurat and cut across the entrances of the row of paved shrines of the First Dynasty which has been described above; it was of mud bricks similar to those of the pavement, which came against its third course. No more of the building than this was found, but the remains would indicate that the First Dynasty building, whose floor lies from 1·00 m. to 1·35 m. below the green brick pavement, had been replaced by one of more or less similar design, or at least occupying a similar site, and that there had been an open court in front of the then Ziggurat (the pavement is cut away by the foundations of the Ur-Nammu Ziggurat). In the pavement there were cut three pits, two rectangular and one circular, about 0·55 m. deep; all were neatly cut and filled to the top with red burnt earth; the level from which they started showed that they were not of the same period as the rectangular pit filled with limestone blocks which was in their immediate neighbourhood (see p. 34), but they may well be an earlier version of that and have served the same purpose as foundations of altars standing in the Ziggurat courtyard.

Evidence of reconstruction was given by the entrance-chamber and store-room against the south-east wall of the First Dynasty building (see p. 9), but the levels are not very similar and the new work there and that under the 'Boat Shrine' need not be connected or contemporary; cf. also pp. 17 and 22.

CHAPTER III

THE ZIGGURAT TERRACE: THE THIRD DYNASTY BUILDINGS

AFTER his successful revolt against Utu-ḫegal of Erech Ur-Nammu set to work to beautify the city which was to be the capital of the kingdom, and a thorough reconstruction of the Ziggurat and its surroundings was part of his plan. The Temenos area, E-gish-shir-gal, was enclosed by a great wall and its floor was raised above the level of the city; the wall line was so drawn as to include the ancient Ziggurat in its western angle, on the south-west running against the face of the old terrace, on the north-west leaving an interval of about thirty metres. The building of the terrace was necessarily the first step.

The North-west side of the Terrace (Pl. 68).

The old First Dynasty terrace front was trimmed back, its buttresses removed, and its stone facing for the most part destroyed, and against its core was built the new retaining-wall. This still stands in places (Pl. 15) to virtually its original height (*minus* the parapet), i.e. to 1·70 m. It is sharply battered, as is natural with a wall destined to hold up so great a weight, with a slope of 35 in 100, and has shallow buttresses, decorative rather than constructional, 4·10 m. apart, 4·80 m. wide, and with a projection of 0·35 m.; the material is mud bricks, unstamped, flat-topped, of a very smooth chocolate-brown clay, measuring 0·23 m. ×0·15 m. ×0·09 m., set in mud mortar of a slightly lighter colour; the wall-face was mud-plastered. Inserted in the brickwork of the wall-front were three rows of baked clay cones about 0·70 m. apart and with the same interval between the rows; thirty-six were found *in situ*; they were nail-shaped with smooth, rounded heads, and bore on their stems the dedication-inscription of Ur-Nammu to Nannar of his building E-temen-ni-il; the inscription, of course, was concealed (as when in a later period the whole cone was buried in the core of the wall or beneath the floor), that being the concern of the god, or of posterity, but so far as could be detected the mud plaster of the wall was brought up to but not over the heads of the cones, so that at the time of discovery these, their pale colour in contrast to the dark mud, stood out in relief and made a regular pattern along the terrace edge (Pl. 15 *a*); at first sight there would seem to be here a survival of the old cone-mosaic decoration, but that it was really such is most doubtful (see p. 27).

The North-east side of the Terrace.

Here the whole of the First Dynasty terrace wall was removed for the widening at the terrace's expense of the great Nannar courtyard; the retaining-wall built by Ur-Nammu had in its turn been almost entirely destroyed

by the further enlargement of the court in Kassite times, and only the front (north-east) face of its foundations could be traced under the courtyard paving in front of the Kassite wall; it sufficed to show that there had been here a salient which undoubtedly contained a gateway leading from the courtyard up to the Ziggurat platform, as was the case in subsequent reconstructions. Loose cones were found here, but none *in situ*, and the wall was ruined down too low to show whether its face was vertical or battered, but in all probability there was a double wall of which the inner was the true retaining-wall of the platform and the outer, of which we found the foundations, was the façade of the great court. On this see below, p. 76.

The South-east side of the Terrace.

Built as a revetment against the First Dynasty wall came the wall of Ur-Nammu, 5·85 m. thick, with a vertical back face and a front face sloped to a sharp batter, relieved by buttresses 0·45 m. deep, 3·10 m. wide, and apparently 5·00 m. apart; the face was too damaged for the measurements of the buttresses and their intervals to be accurate; in any case they do not quite correspond to those on the north-west side. It was preserved to a maximum height of 0·65 m., including a footing 0·45 m. wide which ran flush with the front line of the buttresses; its bricks measured 0·23–0·24 m. × 0·15 m. × 0·09 m. The ground-level outside the terrace wall, fixed by a pavement of mud bricks which extended south-east from the wall's foot as well as by the features of the entry, was very much higher than on the north-west and approached more nearly that of the terrace itself; this might account for slight changes in construction. In this south-east wall there was an entry which corresponded roughly to that of the First Dynasty period and was repeated by restorers as late as Kuri-Galzu; the ruins showed two different phases of construction and two slightly different plans, both of which must be attributed to Ur-Nammu; the remains are confused but seem to give the following results (see photograph, Pl. 19 *a*, and detailed plan, Fig. 1).

According to the original scheme a passage 1·50 m. wide on the level of the mud-brick paved area beyond the terrace ran through the thickness of the enceinte wall, its side walls showing the herring-bone courses characteristic of Ur-Nammu; across the passage was a door, and beyond the door were steps of burnt brick going up to terrace-level, the bottom tread being 0·75 m. and the top existing step 0·50 m. below that level; the steps were preserved to a width of 0·80 m. only, the part on the north-east having been destroyed by a hinge-box of later date; the bricks were of two sizes, 0·37–0·40 m. sq. and 0·39 m. × 0·19 m. × 0·08 m. respectively, and they rested on a packing of mud bricks 0·47 m. sq. corresponding to those in the terrace itself. At a point 0·15 m. to the south-east of the bottom step there was a mud-brick door-jamb which at 0·37 m. from the step was carried on in burnt brick with a set-back of 0·15 m.; the burnt-brick wall, of bricks measuring 0·29–0·31 m. sq. × 0·05–0·06 m. thick, ran for a distance of 1·00 m. or 1·20 m. (its end being irregular) and was then bonded into the mud-brick side of the entry passage from which the entrance jamb projected

again by 0·15 m. The floor of the passage was of clay, and the total rise from it to the Ziggurat terrace was 0·90 m.; the face of the burnt-brick wall flanking it is not good and was masked with mud plaster, and there was mud brick in the upper course.

That the mud-brick terrace wall through which the passage runs is the work of Ur-Nammu is proved by the character of its bricks, the normal mud building-bricks, 0·23 m. ×0·15 m. ×0·09 m., of this king's constructions: the fact that the mud bricks on which the steps are based are identical with those in the terrace packing is conclusive for the steps being Ur-Nammu's because, on the terrace, walls of Ur-Nammu are found resting on packing

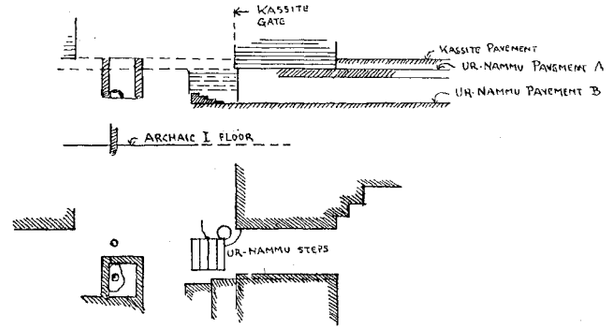

FIG. 1.

of this nature. The passage therefore with its steps descending from the terrace to the outer level is part of the original Third Dynasty scheme.

At the exit of the passage, 0·90 m. above its floor, there is a pavement of burnt bricks set in bitumen, four courses thick, which runs south-east and, interrupted only by an open surface drain lined with bitumen, could be traced right across the 'Sacred Way' to the entrance of the Nin-gal temple; on the north-west it is bounded by a wall of burnt bricks 0·29 m. sq. built on the top of the mud brickwork of the original passage entry. The bricks bear the stamp of Ur-Nammu. The pavement runs through the length of the passage and is bordered by side walls of burnt bricks 0·29 m. sq. (A, A in photo) which rest on the top of the older mud-brick wall but overhang it slightly, reducing the width of the passage to 1·32 m. To the north-east of the line and behind the burnt-brick wall on the south-east face there is a patch of pavement made with two courses of burnt bricks 0·29–0·30 m. sq. set in bitumen, the surface of which is about 0·85 m. above that of the four-course pavement; it rests on a packing of Ur-Nammu mud bricks; its outline has been much destroyed inasmuch as it lies between and under the jambs of the second Kuri-Galzu terrace door, but it looks like the pavement of a small chamber alongside the Third Dynasty entrance. Behind the early flight of steps was a brick-built hinge-box containing an inscribed diorite door-socket of Ur-Nammu (the inscription a duplicate of that on the bricks); it is backed against the mud-brick packing of the terrace and its top is just higher than the pavement of burnt brick, but as this is itself just below the level of the terrace and must have had a step in the doorway leading up to it,

the position of the hinge-box is not inconsistent with a Third Dynasty date; at the same time, the door-socket has been re-used, for the box in which it stands is secondary, its north-west side being the south-east side of an older box now almost entirely destroyed, and while this may be merely a case of repair after no long interval and both stages may fall within the Third Dynasty period, the earlier box at least, with the socket-stone, must represent the original scheme of the later entrance, and as the brickwork of the box runs beneath remains of burnt brickwork lining the (later) entry passage above the old mud brick, it all forms a harmonious whole.

The original entry with its mud-brick walls and clay floor has all the appearance of having been a provisional one. Later, Ur-Nammu carried out what may always have been intended; he built over the mud brick a pylon gateway in burnt brick and raised the passage by laying down a burnt-brick pavement almost on the level of the Ziggurat terrace and flush with the entry of the temple on the south-east side of the 'Sacred Way'.

It is quite natural that Ur-Nammu should have built in mud brick a terrace which he intended ultimately to revet with a more lasting material, but it is only here at the entrance of the gate passage that any trace of his burnt brickwork remains. On the north-west side of the terrace, where alone the wall-face was well preserved, nothing in the ruins points to there having been a revetment in burnt brick before the time of Warad-Sin's reconstruction. The difficulty is precisely that the mud face of the Ur-Nammu wall is so well preserved; it is incredible that a wall sloped as this is should show virtually no trace of weathering if it had been exposed for nearly three centuries. On the third stage of the Ziggurat itself we shall observe a similar phenomenon, and there I suggest the wholesale removal of an original burnt-brick face. On the south-east side of the Third Dynasty Temenos it is clear that there was a facing of burnt brickwork (Ur-Nammu) which has been completely stripped away and the mud-brick core of the wall exposed. In the case of the north-east face of the terrace the evidence is clear that it was built and finished in mud brick, but this does not alter the possibility that a burnt-brick face may have been added very soon afterwards, and the fact that it would have been a mere skin, not bonded into the mud brick, would facilitate its removal and account for the lack of any proof of its existence. There is no proof, but I am strongly of the opinion that a burnt-brick casing for Ur-Nammu's work was not only planned but executed. In that case, of course, the terracotta cone-heads would not have been visible, but hidden behind the skin of burnt brick; for this there is an exact analogy in the bastion of Warad-Sin (p. 43), where also the dedication-cones were set in the face of the mud-brick core of the wall and were concealed by its burnt-brick facing.

In view of the condition of the mud plaster, the removal of the casing must have been done immediately before the new casing was built. That the terrace front was damaged by the Elamites can safely be assumed, and in the course of the next few generations it would have deteriorated farther; when Sin-idinnam (or Warad-Sin, see p. 41) determined on its restoration it is

likely that the burnt-brick skin was in such a bad condition that it formed a difficult background against which to lay the new brickwork, and the easiest method was to remove it altogether.

The South-west side of the Terrace.

The inner face of the enceinte wall was found at the west corner, backed against the plano-convex brickwork of the First Dynasty terrace front; farther to the south-east, close to the south corner of the Ziggurat, it was found inside the wall chambers. The outer face was only laid bare at one point near the west corner, and there it was weathered away into a formless slope of brickwork resting on the top of the great enceinte wall of the Temenos.

The main entrance to the Ziggurat enclosure may have been through the building in its east corner which was later to be known as E-dub-lal-maḫ. The original name for this, Ka-gal-maḫ, 'The Great Gate', is symptomatic, for there are inside the building steps of the Third Dynasty period which would bridge the gap between the levels of the terrace and of the ground outside it, and the back wall of the building, added in the Larsa period, has no place in the original plan. The earliest burnt-brick construction that we found at all well preserved is that of Bur-Sin, and the ground-plan of his building could not be recovered, but there were earlier remains in mud brick resting on foundations of burnt bricks of a type used by Dungi.[1] It is therefore quite possible that Ka-gal-maḫ, in a form not very different from that which it possessed as E-dub-lal-maḫ, went back as early as the beginning of the Third Dynasty and was an essential feature of the Ziggurat terrace.

The terrace wall rose up to form the outer wall of a series of rooms that ran all round the court; it was, in other words, a double wall with intramural chambers.

On the north-east side all traces of the wall chambers had disappeared, and it is only by analogy with the other sides and with the facts of the north-east terrace front in subsequent periods that they can be restored in the plan. On the south-east side also the restoration has to depend upon later reconstructions which were almost certainly faithful to the Third Dynasty design—the late Babylonian reproduces the Kassite and the Kassite building rests on the foundations of the Larsa walls, and that the tradition goes yet farther back is practically certain. On the south-west side there are, however, definite remains of the Third Dynasty chambers. Such details of the early work as were preserved are as follows: of the first room in the south corner (see plan, Pl. 68) nothing. In the second room part of the face of the south-west wall of Ur-Nammu remained, but the cross-walls were destroyed; the position of the north-west wall, however, was assured. Of the south corner chamber nothing remained, but its limits were clearly shown by a drain which was incorporated in its north-west wall. This was a vertical drain-shaft built of burnt bricks set in bitumen, of the type regularly employed for carrying off rain-water from the flat roofs of temples; it resembled precisely a drain of Ur-Nammu in the north-east wall of E-nun-maḫ, a

[1] On this see *Ur Excavations*, vol. viii, *The Kassite Period*.

large drain of Bur-Sin in the Temenos wall against the south-west side of the Gig-par-ku temple, and the (neo-Babylonian) drain in the north-west wall of the Nin-gal temple on the Ziggurat terrace; in this case there were preserved only the lower courses of the shaft with the opening in its north-west side giving on to a well-built brick channel that ran north-west and then broadened out to a junction with two other drain-channels, one coming from the Ziggurat, one from a vertical drain farther to the north-west, while to the south-west there ran off the main exit channel, brick-vaulted, that took the combined water out through the terrace wall.

The drain (Pl. 20 *b*) was an interesting piece of work. From the 'apron' at the foot of the shaft in the south-east face of the Ziggurat there had been an open channel, now much ruined, which led off from the face of the Ziggurat and then made a right-angle turn to the south-west with a broader and a deeper channel which at one point was narrowed by brick projections perhaps intended to form a catch-pit. The junction of the four water-courses was carefully contrived with curves calculated to slacken the current of the water, and in the exit there was another narrowing of the channel, and the channel itself was at its start less deep than the junction-pit, so that the latter would hold the sediment, while from this point the channel deepened steadily. The whole thing was a very creditable piece of hydraulic engineering of a simple sort. The construction of the vertical drain-shaft makes it certain that the wall of the chamber was of mud brick; it is so in the other instances quoted above, and had it not been so the shaft would have been simply contrived in the thickness of the wall and would not have been a separate construction as it is; analogy shows that its front would have projected a little—not more than 0·50 m.—from the face of the wall in which the rest of it was incorporated, and it is therefore possible to fix the exact position of that wall. The same is true for the corresponding drain-shaft to the north-west; this has its opening on the south-east side, so was intended to drain the roof of a room or range of rooms lying to the north-west; consequently the space between the two shafts was not roofed. The fact that the two channels from the vertical drains have their north-east edges on the line of the inner face of the north-east wall of the range does suggest that this wall was continuous, and since we have analogies for drains running below the threshold of doorways (e.g. by the north corner of the Ziggurat), it is possible to suggest a doorway at this point in the wall; but since such vertical drains are always in external walls this would be at most an enclosed court, i.e. unroofed, and it is equally possible that there was no north-east wall and that there was here a recess opening out of the main terrace and interrupting the series of wall chambers.

Room 3: the south-east wall was vouched for by the drain-stack, though its precise position is doubtful; the position of the north-west wall was given by a patch of burnt-brick paving in room 4; near the (vanished) south-west wall was a square block of masonry, Ur-Nammu burnt bricks set in bitumen, with a step against its north-east face; its use was uncertain. Room 4: two patches of pavement gave the dimensions of the room; judging by later

reconstructions there may have been a door in the south-east wall, but no trace of it remained. Room 5: all the walls showed Ur-Nammu mud-brickwork, and in the north-east wall there was one jamb of a doorway leading out into the long, narrow court at the Ziggurat's foot; there was presumably a door in the north-west wall also leading into room 6, but as the remains were all below floor-level, no sign of the opening was left. Room 6: all the wall-footings were of Ur-Nammu mud brick. Room 7: a right-angled frâgment of masonry (burnt bricks) suggested a set-back in the line of the interior wall from which a corresponding set-back of the outer wall-face may be deduced; I would suggest that the modification of the general line of the wall was intended to conform to the curved façade of the Ziggurat. In the room was a patch of Ur-Nammu pavement. Room 8: the later walls rested on the remains of mud-brick walls of Ur-Nammu type. Room 9: the whole was paved with burnt bricks bearing the stamp of Ur-Nammu laid in bitumen mortar; the edges of the pavement had been cut away to lay the foundations of the later walls, the original having been destroyed to below floor-level. In the outer face of the north-west wall was a drain-stack of burnt brick and bitumen of which only the base survived, and from it a drain-channel ran north-west, to break away after 8·00 m.; this means that the wall in question is an external wall and that the range of chambers ends here, to be followed by an open or unroofed space. The position of this drain as regards the Ziggurat is not the same as that of the drain at the other end of the range, for that lies clear of the south corner of the Ziggurat and this is well within the west corner; but it is tempting to suppose that the two are analogous. What remains of the horizontal drain channel takes us almost to the Ziggurat corner; that it ran farther is certain, and it would not have to run far to connect with a channel coming from the vertical drain in the north-west face of the Ziggurat; all evidence is lacking, but later drains do suggest an exit through the terrace wall (see the Kassite plan), and again, the existence of the Larsa and Kassite walls to the north-west suggest a Third Dynasty wall in the same position, and if we assume this and a second vertical drain in it (of which no trace remains) we should have a drainage system similar to that at the south-east end of the range and in a courtyard of precisely similar dimensions. This courtyard, again, may have been open on the north-east or may have been enclosed by the continuous wall of the range of chambers. Certainly the area on the south-west of the channel was paved with Ur-Nammu bricks which were found to rest on a packing of mud bricks 0·23 m. × 0·15–0·16 m. × 0·07 m. which continued as the core of the wall to the edge of the terrace; this was built with three courses of bricks laid herring-bone fashion alternating with flat courses, the front was battered as usual and had buttresses with a projection of 0·47 m. Between the inner wall of the range of chambers and the Ziggurat there were, at this north-west end, remains of a Third Dynasty burnt-brick pavement—the bricks bearing the Ur-Nammu stamp set in bitumen—which had apparently covered the entire area, but had been broken by a surface drain of Larsa date which ran along the footings of the Ziggurat for its whole length.

The North-west side of the Terrace.

On the north-west the terrace wall of Ur-Nammu and the side of his Ziggurat are not exactly parallel, and the line of the inner face of the wall rising from the edge of the terrace is by way of being a compromise between the two.[1] The space from the foot of the Ziggurat to the edge of the terrace is on the average 30·00 m.; the wall rising from the edge has at its south-west end a thickness of 5·85 m., the same as on the south-east, but that width is not uniformly maintained. Of the wall, standing as it did just on the line where the effects of denudation would be most felt, there remains very little; the whole of the outer face has gone, the inner face is given by scanty indications in the chambers built against its south-east side; beyond (to the north-east of) those chambers it has vanished altogether, but it is here that its character can best be followed.

Of the rooms along the north-west side of the Ziggurat court the first, in the north corner, was the most important. Its door had reveals on the outside; inside, against the north-east jamb, was a socket-stone of Ur-Nammu in position. Below the foundations of the corner of the room was a foundation-box of bricks 0·23 m. × 0·15 m. × 0·08 m., of which the base was a stamped brick of Ur-Nammu; it was open and empty. The walls of the room had perished, only the mud-brick foundations being left, but the pavement, very solidly constructed with burnt bricks and bitumen, gave the form and area. In the south-west wall, beside the door, was a niche suggesting a shrine. Another inscribed hinge-socket (U. 2772) was found by the doorway of the second room and yet another (U. 2771) in the south corner of room 3; in the west corner of this room there was a vertical drain of terracotta rings (Pl. 16 *a*) which must belong to the Third Dynasty, for its top, not complete, rises well above the First Dynasty level, but is overlaid by the Larsa burnt brickwork of the north-west wall. In the room was found one of the bricks on which had been scratched after firing a rough gaming-board, U. 2728. In the south-west wall was a door of which no trace of brickwork survived, but against what must be the place of the jamb, in the next room to the south-west, was an inscribed socket-stone and, still standing upright in its hinge-hollow, the copper shoe of the door-pole, a shoe of heavy metal (see Pl. 16 *b*, U. 2749) 0·25 m. high and 0·22 m. diam., on the outside of which was engraved a text, the duplicate of that on the stone; it was secured by large copper nails to the pole, which was of palm-wood. The top of the stone was 0·65 m. below the floor-level of the range.

Two of the bricks found *in situ* in the walls bore the inscription (*S.A.K.I.* xx. A. 1 (*c*)), recording the building of E-temen-ni-il by Ur-Nammu, 'Lord of Erech'; if, as I imagine, the title was used by Ur-Nammu for a short time after his successful rebellion against Utu-ḫegal, it would mean that the

[1] It is difficult to account for this irregularity. The First Dynasty buildings on the terrace are alined with the Third Dynasty Ziggurat, and from this one can safely deduce that the Third Dynasty Ziggurat preserved the orientation of that of the First Dynasty. But the north-west wall of the First Dynasty terrace was more nearly parallel to the north-west side of the First Dynasty Ziggurat than is the north-west wall of the Ur-Nammu terrace to his Ziggurat; his builders left the old line and accentuated the divergence of the angles, for no apparent reason.

work on the Ziggurat and its immediate surroundings was started in the early years of his reign as an independent king. In that case it is quite likely that repairs were necessary by the time of his grandson, and the bricks of Bur-Sin found loose in the ruins or re-used in the Larsa walls may well mean that Bur-Sin also worked here, although none of the scanty fragments of wall remaining can be assigned to him. Further, these bricks found *in situ* here are part of the proof that the term 'E-temen-ni-il' was applied to the Ziggurat terrace as a whole, whereas the Temenos enclosure is regularly, by Ur-Nammu and by his successors, called E-gish-shir-gal.

THE BUILDINGS ON THE ZIGGURAT TERRACE

The Ziggurat stood rather to the north-west of the centre of the walled terrace and well back towards its south-west boundary, so that between it and the chambered wall on the north-west there is a space of some 23·00 m., on the south-east about 33·00 m., and in front of the balustrade of its side staircases 40·00 m., the latter divided into two parts by the projection of the central staircase. In later periods all these areas were covered by buildings, and though the destruction caused by the many restorers and rebuilders of the Ziggurat terrace has left very little indeed of the Third Dynasty brickwork, it is probable that the same sites were then occupied by very similar constructions.

To the south-east of the Ziggurat, where stood the Nin-gal temples of Kassite and Neo-Babylonian times, only a single stretch of good walling, burnt bricks set in bitumen, bears direct witness to Ur-Nammu's work, but of indirect evidence there is a good deal. That there was a clear space against the Ziggurat itself can safely be argued from later analogies, but the course of the brick drain which from the Ziggurat runs out at right angles across such a space, but then turns sharply to the south-west, seems to indicate that it was deflected by the existence of a building to the south-east of this, i.e. on the site of the late Nin-gal temple and precisely where the isolated fragment of Third Dynasty wall was found. That wall rested on a packing of mud bricks 0·47 m. sq. which extended as far as the entry-passage in the south-east enceinte wall and from there covered the First Dynasty remains to the north-west as far as the well; such bricks have not been found in other parts of the terrace and would seem to have been used exclusively for the foundations of a building which accordingly covered the area over which they occur.

In the courtyard of the latest Nin-gal temple is a well of which the top is due to Nabonidus, the next section to Sin-balatsu-iqbi, the third to Kuri-Galzu, the fourth to a Larsa king, while its original foundation and much of its remaining masonry is the work of Ur-Nammu; probably throughout its whole existence it served the same purpose, i.e. was attached to a temple of Nin-gal, and stood in much the same relation to the building.

The Well (Pls. 21 *b* and 69).

The total depth of the well from the pavement of the Nabonidus temple was 11·50 m. From the bottom up to a height of 5·30 m. it is built with Ur-Nammu bricks, 0·23 m. × 0·17 m. × 0·075 m. for the inside lining and

0·32–0·33 m. sq. for the outer casing; the inner face of the brickwork is deeply worn and rutted by the friction of the ropes and the swinging of the buckets; the brick-laying was done from the inside and the outer face, against the sides of the earth shaft, is slightly curved and quite rough. Above the Ur-Nammu work, for a distance of 1·40 m., there is a change in the character of the construction and the bricks are of the typical Larsa colour and measurements, 0·28–0·29 m. or 0·25 m. long ×*c.* 0·18 m. ×0·09 m. Above this there is a projection in the masonry marking a new phase of construction which had clearly involved the destruction and rebuilding of all the upper part of the brickwork. From near the east corner of the Ziggurat a trench has been dug which, starting at the court's level, gets steadily deeper as it runs west; it cuts through a drain of Ur-Nammu so is later than it in date, but is crossed by a Neo-Babylonian drain, than which therefore it is earlier; it leads into a circular pit 6·70 m. in diameter, in the middle of which is the well; the bottom of the pit comes at 2·70 m. above the level at which the brickwork changes from the Larsa to the Kassite type and is strewn with fragments of bricks of Ur-Nammu and Larsa; it is cut through the filling of the Ur-Nammu platform and the mud-brick floor and clay nodule stratum of the First Dynasty court, but it is filled in again with mud bricks of Kassite type, laid in regular courses but with a minimum of clay mortar, which rest directly on the burnt-brick rubble. The burnt bricks of this section of the well (which is 3·70 m. high) were many of them stamped with the name of Kuri-Galzu. Contrived in the north-east and south-west sides of the well there were recesses 0·19 m. wide, opening into the well shaft and blocked at their outer ends; two faced each other at the same level at the bottom of the Kuri-Galzu masonry, two more lay four courses higher up the sides; in each there were set two clay disks (U. 18529), diam. 0·08 m., inscribed on both sides (Pl. 22). The inscription recorded the restoration of the well by Sin-balatsu-iqbi, but the recesses were in the Kuri-Galzu masonry and must have been intended for his foundation-tablets; presumably the workmen of the Assyrian governor removed these and substituted those of their employer. The brickwork that could be attributed to Sin-balatsu-iqbi was in its lower courses very rough and consisted for the most part of broken bricks of the earlier period re-used; there remains of it 1·30 m., rising to the surface of the temple courtyard paving; above this was found part of the well-head of Nabonidus. In the upper part of the Sin-balatsu-iqbi work there were numerous stamped bricks bearing a dedication-text of which there are nine variants giving the names of Anu and En-lil and seven minor gods, apparently the seven sons of En-mešar-ra (see *Ur Texts*, vol. i, Nos. 173–82); in the late period at any rate these gods must have been associated with Nin-gal in the ritual of the temple to which the well belonged. The inscriptions on the bricks of the earlier periods do not in any way assist in the identification of the building and its uses; those of Ur-Nammu bear the ordinary E-temen-ni-il inscription. Close to the well-head there was found a cistern of Ur-Nammu (Pls. 21 *a*, 69, cf. section on Pl. 66), a small building in four compartments, of burnt brick and bitumen, sunk below the courtyard level.

Its construction had destroyed most of the south corner chamber of the First Dynasty building into which it had been cut down to floor-level; the bricks measured 0·28–0·29 m. × 0·19–0·20 m. × 0·085 m. and 0·32–0·33 m. sq. × 0·08 m. The entrance to the cistern was in the south-west compartment; a door at ground-level contained a stairway of three treads in the wall thickness with four more treads against the south-west wall, each one brick square, thickly plastered with bitumen. The south-east wall had been cut through and most of the floor pulled up. Projecting bitumen plaster showed that there had been a penthouse roof over half the compartment; this started at 1·00 m. above the floor in the east corner and at 0·80 m. along the south-east wall was 1·45 m. above the floor; in the north corner there had been an upright beam coated with bitumen, 0·18 m. in diameter (the cast of it remained in the bitumen), and another, apparently, in the south corner; fallen in front of the north-east wall was a piece of a beam round in section and coated with bitumen, 0·50 m. long; there was therefore a flat roof set on a slope, but in order to give head-room over the steps it cannot have extended right across the chamber, but the steps must have been unroofed. A narrow corbel-arched door communicated with the second compartment, and there were similar doors in the next two compartment walls. Here the roofing was different. In the second compartment the bitumen on the north-west wall takes the form of an arc starting in the corners at *c.* 0·85 m. from the floor and rising to 1·35 m. in the centre (the top is actually broken away); in the third compartment the arc starts at 1·10 m. and rises to 1·45 m., in the fourth it starts at 1·20 m. and rises to 1·50 m. In the angles the bitumen plaster stands away from the wall-face against a backing of clay so as to have the appearance of pendentives, but the walls go straight up so that there is nothing to support the weight of a brick dome, and yet the line of the plaster makes it clear that the form of the roof was domical; there were no fallen bricks in the filling of the compartments. A plain mud dome seems impossible, because not being keyed into the walls, it would have slipped down to the floor of its own weight, and it could have been constructed only over a fairly solid centring, of which there is no trace; but it is possible that baskets elliptical in shape (*c.* 1·80 m. × 1·40 m.) were laid one over each compartment, their edges resting on the cross-walls, and were backed with clay and plastered internally with bitumen; the outer walls would rise high enough (the north-west wall is preserved to 1·70 m.) to retain the clay filling and a more solid roof of timbers and matting with mud above may have been placed over the whole construction. The domical form is certain, but that the construction was properly domical is most doubtful, and with so small a space to be covered the easiest method, however non-architectural, might have been adopted. In the cistern were found various stone weights, U. 18584, U. 18585.

From near the well-head of Ur-Nammu a drain had run underground in a north-east direction to join with that which from the bottom of the vertical water-shaft in the angle-tower of the staircase of the Ziggurat ran parallel to the balustrade of the south-east staircase, and from the point of junction the drain, solidly constructed of burnt bricks in bitumen, continued towards the north-east: only the foundation-courses of it survived and these gave out after 3·00 m. The Sin-balatsu-iqbi level had been no higher than that of Ur-Nammu and may even have been lower, so that most even of the drain of the older period had been destroyed, and from where its brickwork ended the water-course which had swept over this part of the site had denuded everything to well below the Third Dynasty level; the photograph on Pl. 19 *b* shows how small an interval separated the different building periods. The destruction which did not spare the underground drains had naturally left nothing whatsoever of the buildings above ground, and no remains of walls were found corresponding to the Neo-Babylonian 'Boat Shrine'. But under the back (south-west) wall of that shrine, towards its west corner, there was found a pit dug down into the firm filling of the Ur-Nammu terrace, its edges traceable to above the wall foundations: it was certainly of Third Dynasty date. It measured 4·60 m. × 3·70 m. and lay with its longer axis north-east by south-west, and was square with the Ziggurat, was 0·95 m. deep, and had for its base the smooth surface of the Second Dynasty (?) floor. The upper part of the pit was filled with very clean light earth of a reddish colour due to burning; below this (0·50 m. down) there were three layers of rough unhewn limestone blocks, the largest *c.* 1·30 m. × 0·70 m. × 0·25 m. (one block looked as if it had been saw-cut, the rest were merely broken lumps) which had been laid carefully round the sides of the pit and packed less systematically towards the centre, but all set close and fairly well fitted (Pl. 20 *a*) so as to form a solid and unbroken mass with a tolerably flat surface, each course independently laid; there were some thirty-five blocks to a layer.

In the dirt between the stones there were found fragments of shell inlay, oblong pieces with a pattern of scales (see vol. iv, Pl. 100), a plain piece of dark shale inlay, a rectangular fragment of copper, and a date-shaped agate bead.

The limestone blocks were of the type used in the front of the First Dynasty terrace wall, and since the north-east wall of the terrace was destroyed by the Third Dynasty builders, may well have come from that source. As regards the purpose of this curious pit the following arguments should be considered:

(1) The pit itself is very carefully dug from the Third Dynasty terrace floor-level, the sides neatly trimmed, and the angles squared; (2) the stones cannot have been on the terrace level, but were brought up from below and were put into the pit for a special purpose, not merely to get rid of them; (3) this is further shown by the care with which they have been laid in regular courses; (4) there is nothing underneath them, so the reason of their being put here is either in the pit or above it; (5) the stones were put in dry, with no mud mortar or packing; the earth between them is light and infiltered (fragments of identical shell inlay were found between the stones and in the earth above them); (6) the upper part of the pit is filled with soft light (burnt) earth; since this would have been a most inadequate foundation the stones were not put in the pit in order to support some heavy object above; yet since there is nothing in the pit there presumably was something above which had to be (*a*) relatively of small weight, and (*b*) rectangular in shape; (7) in the older building there were, in the immediate vicinity, square and circular pits filled with burnt earth, so that there would seem to be a tradition for something of the sort; (8) in the Neo-Babylonian period the site is occupied by a shrine and the pit projects 2·40 m. behind and 1·00 m. in front of the back wall of that shrine against which stood the altar; (9) the ritual importance of burnt earth for the foundations of a religious structure is insisted on by Sumerian texts, e.g. Gudea in *S.A.K.I.*, p. 79, E. 3; (10) the UŞ theory represents the sanctity of a building as resulting from its connexion with something underneath it; (11) a structure the size of the pit could scarcely be anything other than an isolated altar; (12) early Hebrew ritual supplies parallels for the use of unworked stone for altars (Exodus xx. 25), and there were Habiru in Sumer in the time of the Third Dynasty. The conclusion of all this is that there was here in Ur-Nammu's time an altar sanctified by the presence of burnt earth and unhewn stone beneath its foundations, thus combining Sumerian and Semitic ritual ideas; probably it stood inside a shrine of which all traces have disappeared; a precedent for such a building is given by the six shrines of the First Dynasty terrace; it may have replaced a building of the Second Dynasty (?) whose existence is suggested by the earth-filled pits, and the tradition of it may have been continuous and materialized finally in the Nabonidus shrine. A building on this south-east side of the central staircase of the Ziggurat would have balanced that on the north-west side of which remains do exist: for the existence of two symmetrical temples in this position we have the analogy of the two 'Tieftempel' buildings attached to the Warka Ziggurat, also constructed by Ur-Nammu.[1]

Even to the north-west of the staircase the remains are extremely scanty. From the foot of the vertical drain in the middle of the north-west face of the angle bastion a water-channel of burnt bricks and bitumen, the work of Ur-Nammu, runs north-west until it meets and empties into a similar drain which comes from the north-west side of the Ziggurat and passes through the doorway at the bottom of the Ziggurat stairs, under its brick threshold. To the north-east of the point of confluence two outer door-jambs of Ur-Nammu brickwork were found, and the drain runs between these, but thereafter breaks away and disappears. Where it runs parallel to the balustrade wall of the north-west staircase there are between it and the wall remains of Ur-Nammu pavement; the south-east outer door-jamb lines up with a point just inside the corner of the angle bastion, where a cut instead of a built face shows that an original projection has been trimmed back; there had been here a wall, interrupted probably by more doorways, which on the analogy of the later buildings would have been the long room behind the sanctuary; some sparse remains indicated a wall running north-east and continuing the line of the north-west face of the Ziggurat which should be the outer wall of

[1] *Ausgrabungen in Uruk 1930/31*, Taf. 3.

the temple; but it must be admitted that apart from the late analogy we have no grounds for restoring more than the single long chamber whose front lines up with that of the bastion. Beyond the drain exit this line was continued to the north-west and the wall was apparently the external back wall of the range of buildings lying on the north-west side of the Ziggurat.

At the north-west end of the terrace there was an open court measuring some 24·00 m. by 15·00 m., stretching from the base of the Ziggurat to the façade of the intramural chambers along the north-west side; on the south-west it was bounded by a heavy wall built of burnt brick which ran right up to the Ziggurat, close to its western corner, and on the north-east by a building complex which reached almost to the Ziggurat, but left between its end and the foot of the north-west staircase a passage affording entrance to the court. The court was probably paved, but nothing of the pavement remains. Close to the footings of the Ziggurat runs a drain of which only the foundations survive, but it would seem to have been an open channel perhaps connected with the vertical drain-shaft in the Ziggurat wall. At a certain point this branches off and runs diagonally across the court, becoming deeper as it goes and here certainly roofed, to the north corner, where with a slight deflection it passes between the two ranges of buildings and then, turning sharply to the north-east, passes between the end of the north-east range and the terrace wall and continues past the former, keeping close to the wall-face, to the north corner of the Ziggurat terrace. All along here the terrace has been denuded below floor- and even wall-foundation-level, and the drain, built of burnt bricks set in bitumen, stands up with every appearance of having been itself a wall, which of course it was not; its exterior brickwork instead of being straight shows a series of buttresses on both sides, but the face is quite rough; on the north-west side the 'buttresses' and the recesses between them are in inverse proportion to those on the outer face of the terrace wall; it is clear that the wall is ruined away below floor-level, but that it had similar buttresses on both faces, that the drain was constructed at its foot and that the burnt bricks were laid immediately against the mud brickwork of the wall-face and therefore reproduce its characteristics. The 'buttresses' on the south-east side of the drain may imply that there was here too a mud-brick wall (or a wall of burnt bricks with mud-brick foundations, according to the normal Ur-Nammu rule of construction) which has been ruined away completely; in that case there were here no intramural chambers, but the building complex of which scanty remains were found ought to be restored as extending farther to the north-east than I have ventured to show on the plan.

The building facing on the courtyard at its north-east end has been so often destroyed and rebuilt that very little of the original work survives; occasionally there is a little burnt brick, but most of the walls shown on the plan are restored from the five courses of mud brick which formed the Ur-Nammu foundations, and even these are fragmentary and the ground-plan has often to be based on later reproductions of the old scheme. I have already mentioned an outer doorway through which the drain from the bastion passes; it was of burnt bricks set in bitumen, but only the lowest courses were left.

Beyond it, the end of the balustrade wall of the staircase had a reveal in its outer corner, and opposite to it there was a block of burnt-brick and bitumen construction consisting of a fragment of wall-face and a door-jamb with a corresponding reveal; the latter was standing well preserved up to the level of the Nabonidus pavement under which it had been buried; we have here therefore a passage which from the front of the Ziggurat leads at once to the Ziggurat stairs and to the courtyard (for which there may have been a third doorway) under the north-west side of the tower.

Of the north-east block proper the outer or south-west wall is represented only by a stretch of its inner face in room (2), but the wall so given can safely be prolonged to the south angle of the building with a main entrance in it giving on room (1), as restored in the ground-plan on Pl. 68. The next wall is represented by its outer face in room (2) and its inner face in room (3), where also we get the corner of the door-jamb; the dividing walls between rooms (1) and (2) and between rooms (3) and (4) have no contemporary evidence, but are restored from the Larsa and Kassite versions. Against the door-jamb of room (3), on the inside, is a solid block of burnt bricks set in bitumen which would seem to have been a pedestal (Pl. 17 *a*): the face of the wall is preserved all round the chamber and gives the position of the door into room (5) (given also by the wall-face in room (5) itself), and the position of a door into room (6) is also given by the wall-face inside that room: in the south corner of the room against the door-jamb and partly underlying the cross-wall between this room and room (5), which must therefore have been slightly recessed, there was found *in situ* a door-socket stone with the inscription of Ur-Nammu, the normal short dedication to Nannar. Scanty as the remains are, they suffice to show a ground-plan of a building consisting of an entrance-chamber off which a small room opens on the north-west; beyond the entrance-chamber is a small, shallow court, presumably unroofed, which again has a small chamber on its north-west side and in its north-east wall two doors giving on chambers which would seem to be those at the back of the building. The obvious comparison is with the First Dynasty building occupying the same site. In that (see Pl. 66) the proportions are different, but the general arrangements are curiously similar. An entrance-chamber flanked by a room on the north-west leads into a courtyard in which is an elaborate brick base; behind the courtyard are two small rooms (these have still smaller compartments behind them for whose like there is no evidence left in the Third Dynasty ruins) and on the south-east of the courtyard and the back chambers are two rooms which correspond to room (4) on the north-west of the Third Dynasty court and a possible room in the north corner. There is no doubt but that, *mutatis mutandis*, the Third Dynasty building reproduces that of the First Dynasty, and therefore that it served the same purpose. The only argument that could be urged against this is that whereas the back rooms of the early buildings are entirely occupied by fire-places, here in room (6) we have evidence for a wooden door, showing that the place was used as a room. Perhaps this is the strongest argument for restoring behind rooms (5) and (6) small compartments like those in the First Dynasty building which

could be in this case the actual furnaces; that there were such is proved by the inscriptions found. In the thickness of the wall of room (6), at its west corner, there was sunk in the mud-brick foundations which alone remained (the lowest surviving course of burnt bricks was of Larsa date) a box of burnt bricks; its top was level with the burnt bricks of the (late) wall, and it was set back *c.* 0·50 m. from the outer face of the mud-brick (Third Dynasty) foundations (see photograph, Pl. 18 *a*); a similar box was found in the thickness of the wall in the south corner of room (3).[1] In each box there were two copper cylinders (Pl. 18 *b*), of solid metal, U. 17626, A, B, and 17627, A, B; three of them bore inscriptions of Nur-Adad and one an apparently almost duplicate text of Marduk-nadin-aḫe; probably the latter, when repairing the building, had found four such cylinders of the Larsa king and had kept one and substituted a cylinder of his own, specially made to match, to record his own pious works; at any rate we thus have proof that from 1970 B.C. to *c.* 1065 B.C. the place was used as a kitchen in which was prepared the food for Nannar and the other gods worshipped with him in the Ziggurat temple—the great copper cooking-pot is specially mentioned.[2] Since these buildings are merely restorations of those of the Third Dynasty and the latter reproduce the features of the First Dynasty building in which actual remains of the cooking-places were found, the tradition was evidently constant and the same function can be assigned to Ur-Nammu's foundation.

A section of the ruins here shows that in the area covered by the north-east block, the 'kitchen' building, the floor of the First Dynasty court is overlaid by very level strata of grey ash and red dust due to the disintegration of mud bricks accidentally burned, strata so regular that they suggest wind action and the temporary desertion of the site, to a total depth of 0·55 m. Then comes a single layer of burnt brick, fragments, but laid sufficiently evenly to look like the foundation of a clay floor of which the surface has gone: some kind of intermediate activity seems to be indicated. Immediately on this lie the mud-brick wall-foundations of Ur-Nammu and on them, as a rule, come directly the burnt-brick walls of his successors; the total interval between the First Dynasty floor and the Larsa pavements (which have indeed disappeared, but would correspond to the second or third course of burnt brickwork in the walls) is only 1·25 m. The destruction of Ur-Nammu's E-temen-ni-il by the Elamites must have been very thorough.

But scanty though the actual remains are, they are enough, if taken in

[1] A small circumstance is perhaps worth recording as it substantiates the accuracy of our dating here where the evidence is so scanty. The first box showed by the measurement of its bricks, 0·27 m. ×0·18 m.×0·09 m., that it should be of Larsa date, but the mud bricks measured 0·23 m.×0·15 m.×0·07 m., and were therefore of the type we confidently assigned to the Third Dynasty; yet the two seemed to be incorporated, and it looked at first as if our criteria were failing us and could not always be trusted. A section made by carefully cutting through the wall showed that against the sides of the box mud bricks in alternate courses were of full length and of a length of less than 0·10 m.; in fact, a hole had been cut into the existing mud brickwork exactly to the size of the proposed box, with very straight sides, and had been lined with the burnt bricks and bitumen: in spite of the neatness with which the job had been done, its nature was evident and the soundness of our criteria based on brick measurements was vindicated.

[2] The text on the cylinders combines those on the two clay cones found in the ruins of the same building, U. 2755, 3267, 6310, 6973, *Ur Texts*, vol. i, Nos. 112, 124, which are now seen to belong together; see p. 47.

conjunction with the earlier buildings which they replace and the later buildings whose purpose is made clear by inscriptions, to explain the arrangement of the Third Dynasty platform. On the north-west and on the south-east the Ziggurat was flanked by buildings more or less symmetrical in design (as in the case of the First Dynasty), each consisting of a 'kitchen' which faced to the south-west where lay an open courtyard; in the north-east block, dedicated to Nannar, was prepared the food destined for him and for the minor gods of his retinue, and in the south-east block was prepared the food for Nin-gal, Nin-ka-si, Shu-zi-an-na, Nusku, Nin-sig, En-nu-gi, and En-lil. The existence of these two buildings makes probable the restoration of two temples built against the north-east façade of the Ziggurat, on either side of the central staircase; in them would be offered the food prepared in their respective kitchens. It is clear that the north-west kitchen was structurally connected with the north-west temple of which slight remains do exist, and a similar association can fairly be assumed for the buildings on the south-east: without supposing that the two blocks were identical (the First Dynasty ground-plan was not quite symmetrical, nor was the Neo-Babylonian) we can be tolerably certain of their existence, their general arrangement, and their purpose.

CHAPTER IV

THE ZIGGURAT TERRACE: THE LARSA BUILDINGS

THE Ziggurat and its attendant buildings must have borne the full brunt of the destructive fury of the Elamites, and it is evident that the restoration of them was one of the main tasks of the royal builders of the succeeding dynasty. Probably the shrine or shrines on the Ziggurat were completely ruined, but the massive structure of the base resisted the efforts of the enemy, so that what remains of it to-day shows very little in the way of Larsa work —repairs to the staircase (see p. 122), the repaving and remodelling of the chamber against the south-east side of the second stage, where were found quantities of little votive copper boats and crescents (see p. 111), a fragment of rather rough paving alongside the upper flight of stairs (see p. 123), and a very careful piece of patching of the main wall on the south-west side, near the base, which was due to Bur-Sin, if a brick-stamp in the new work can be trusted, but it is much more likely that the work was really done at a later (Larsa) period and that old material was used for it.

But the subsidiary buildings on the Ziggurat terrace, razed to the ground by the Elamites, were rebuilt and repaired many times during the Larsa régime: so constant were the changes, and so complete was the destruction of the buildings by later enemies and later restorers, that it is impossible to trace the different phases in the rebuilding or to discover for what work the different kings whose records were found here were severally responsible. There were found loose in the soil bricks and foundation-cones of Enannatum, son of Ishme-Dagan of Isin and vassal of Gungunum, king of Larsa, of Libit-Ishtar, of Nur-Adad, of Sumu-ilu, of Sin-idinnam, of Silli-Adad, of Kudur-Mabug, and of Warad-Sin,[1] so that practically every Larsa ruler had engaged in building operations on the Ziggurat terrace; only in the cases of Sin-idinnam, Nur-Adad, and Warad-Sin, however, could we identify the actual work.

The Terrace Wall (Pl. 70).

I have suggested above (p. 27) that the mud-brick terrace wall in which the cones of Ur-Nammu were found *in situ* was really but the core from which a facing of burnt brick, damaged doubtless by the Elamites, had been stripped. In the Larsa period a new facing of burnt brick was added. Against the old sloped wall of mud brick there was laid a backing of mud brick and, bonded into it, a face of burnt brick, the whole having a thickness of 3·50 m., which reproduced the old, having the same slope and the same shallow buttresses similarly spaced and set directly in front of their predecessors (see Pl. 23). This revetment was followed along its entire length. Towards the south-west end there came an unusually long interval between the buttresses and

[1] *Ur Texts*, vol. i, nos. 104, 106, 112, 114, 117, 121, 122.

the last buttress at the west end was also of more than the normal length; at 2·60 m. from its start it began to curve sharply backwards to the south-east and then broke away. It is evident that the west angle of the terrace was rounded; the south-west wall rested on the Temenos wall, standing back only a little way from its front line, and the collapse of the upper part of the Temenos wall had involved the disappearance of the wall of the terrace.

On the south-east side of the terrace, where there was virtually no difference of level between the terrace and the area outside it, little of the wall remained. North-east of the entrance to the terrace from the 'Sacred Way' the face of the Larsa revetment was found 2·30 m. outside that of the Ur-Nammu mud-brick wall; it was of bricks 0·27 m. ×0·18 m. ×0·09 m. and was slightly battered, but had apparently no buttresses; it consisted of a well-built skin some 0·55 m. thick behind which was a filling of coursed brick rubble extending to the face of the Ur-Nammu wall; above the level to which that wall was ruined down the burnt brickwork was carried back over it so as to give the Larsa wall a total width of 3·40 m. The entry to the terrace was evidently the same in the Larsa as in the Kassite age, and in each case the plan was a reproduction in all essentials of that of the Third Dynasty. South-west of the entry virtually all the Larsa brickwork had disappeared, but enough remained to show that its lines were faithfully followed in the Kassite rebuilding.

It is, then, only on the north-west that the terrace wall is preserved well enough for its character to be clear. Unfortunately there were in the wall no stamped bricks to fix its authorship. The new outer wall of the intramural chambers on the terrace overstepped the edge of the Third Dynasty terrace and therefore could not have been built before the addition of a *kisu* or revetment had afforded room for its foundations; and since in that wall there occur stamped bricks of Sin-idinnam, there must have been such a revetment at least in his time. On the other hand, the burnt brickwork of the new retaining-wall is bonded into the mud-brick salient on the north-east which we know to be the work of Warad-Sin, whose reign comes later than Sin-idinnam, and it would therefore be natural to assign to Warad-Sin the revetment of the terrace. There is here a conflict of evidence. Either we must suppose that there was an earlier revetment of Larsa or Isin date on which the foundations of the intramural chamber wall rested, and that this was again refaced by Warad-Sin with the existing brickwork, or we must attribute the existing brickwork to Sin-idinnam and assume that for the building of Warad-Sin's bastion part was cut away and the mud brick carefully adjusted to the broken end of the burnt-brick wall:[1] the latter theory is perhaps the more attractive, because it is not easy to understand why, if the two buildings were contem-

[1] The bonding was very carefully done. In the angle a certain number of burnt bricks were incorporated in the mud brickwork—they may have been old bricks taken from the revetment and reused. At the base of the mud-brick wall the revetment has been trimmed to a straight line and the mud bricks are laid inside this, against the brick ends; at 0·30 m. up for six courses single burnt bricks laid in the bastion wall abut on the revetment; the seventh course gives a true bond connecting the two walls; above this the bastion wall fails, but the end of the revetment shows that the true bond was carried up regularly.

porary, there should have been a change of material and the poorer quality employed for what is certainly the more important section of the work.

The bastion of Warad-Sin projected some 8·00 m. from the line of the terrace wall and occupied the last 22·00 m. of the wall-space, lying at the extreme north-east end in such a way as to mask the junction of the terrace wall with that of the great courtyard; consequently it backed on the open area at the north-east end of the terrace and corresponds approximately to the smaller salient of Dublal-maḫ at the east corner. It is a solid mass of mud brickwork rising from the lower terrace enclosed by the Temenos wall and is pierced by a staircase giving access from that lower level to the Ziggurat platform; it is therefore in the nature of a sally-port.

From the burnt-brick revetting wall into which it is bonded the mud brickwork runs out, with a vertical face, to a corner buttress the face of which, decorated with two of the double grooves usual in sacred buildings, forms one element of a re-entrant angle cut out from the main frontage. The façade (Pls. 29, 30, 71) is most remarkable. On a heavy foundation consisting of eighteen courses of brick strengthened by a triple plinth rises a wall entirely made up of large attached half-columns with double recessed niches down their centres;[1] this type of decoration, which was copied later by Kuri-Galzu and by the Neo-Babylonian builders, now makes its first appearance in Larsa times. It is obvious that we have here a translation into brickwork of an effect originally produced by timber construction; the curved uprights are palm (?) logs, the niches are composed of squared baulks very probably laced one to another by thongs passed through holes in their angles, in the fashion illustrated by actual examples found by Petrie at Tarkhan in Egypt.[2] The decorated façade rose either directly from ground-level or from a low base of not more than three courses of bricks;[3] it is impossible to say whether it was carried up to the full height of the tower, but the great width of the individual half-columns does imply a considerable height, and its effect over a large surface would have been very striking. In the middle of the façade is a recess leading to a doorway flanked by three reveals, and in the angles between the side walls and the outer reveals were mud-brick columns in the round. The columns were built of specially moulded bricks, segmental in shape and with the outer edge not only rounded to the curve of the column-shaft, but with a further boss in relief so that each set of three bricks (two in the lower and one in the upper course) produced a truncated triangle standing out from the column in low relief; these triangles (0·21 m. at the base, 0·20 m. high, with a flat top 0·08 m. across), set in rows one above another, made of the brick shaft a very close imitation of a date-palm trunk, the original from which in Mesopotamia the architectural column was inevitably derived (Pl. 30 *b*). The columns are, strictly speaking, not free,

[1] Actually rather less than half-circles in plan.

[2] Cf. Petrie, *Tarkhan*, i, Pl. IX. 6, 7, reproduced in *Ur Excavations*, vol. i, Fig. 25, p. 68.

[3] The greater part of the foundations were below the level of the Temenos floor, and the widening of them effected by the three plinths was purely constructional. That solid foundations were necessary in the made soil of the Temenos platform is shown by the pavement of the threshold in the doorway recess; this is sharply curved down at the two sides owing to the sinking of the foundations under the weight of the flanking towers.

although built in the round; they touch the two walls in the angle of which they stand, and at intervals there are courses of bricks running through and attaching them to the wall's fabric, a precaution presumably due to the weakness inherent in the material of which the columns are built and in their small girth; for the shafts are slender,[1] with a diameter of only 0·70 m., and would certainly require support. This is the most ornate piece of Larsa building encountered at Ur, and the fact that it includes free columns is of much importance. The use of that architectural feature, long denied to the Sumerians, is now firmly established for all periods of their history. For the First Dynasty of Ur there are the temple columns of al-'Ubaid,[2] for the Gudea period the great base at Tello,[3] for the Third Dynasty a single shaft at Ur,[4] for the Larsa period this bastion of Warad-Sin, and Peters' claim to have found at Nippur a columned hall of Kassite date,[5] though discredited at the time, can now perhaps be accepted. At no stage in Mesopotamian history can the possibility of the use of the column in architecture be discounted.

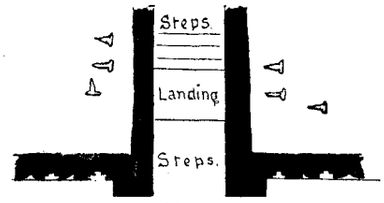

FIG. 2.

The half-column wall was built with a very slight batter. The mud bricks measured 0·34 m. sq. × 0·09 m. The half-columns and the columns were covered with a thin greenish-grey wash like a colour-wash, distinct from the material of the bricks, and apparently applied after the building was finished; this wash does not appear on the wall-face in the re-entrant angle. On each side of the plain buttress at the west corner, at 1·50 m. above the footings, there was built into the wall a burnt-clay foundation-cone of Warad-Sin (see Pl. 29 *a*); the stem was embedded in the brickwork and the flat head, projecting five millimetres from the wall, was exposed, the plaster being brought up carefully all round it; the cones (U. 2659, *Ur Texts*, vol. i, No. 131) record the building of E-temen-ni-gur by Warad-Sin during the lifetime of his father, Kudur-Mabug of Larsa.

When the surface-soil was cleared from the top of the ruins more cones of the same sort were found on either side of the stair-passage. They lay behind the burnt-brick casing subsequently added to the building by Kuri-Galzu; some were loose in the filling, some seemed to be in position, embedded in the Larsa brickwork (Pl. 31 *b*, and Fig. 2);[6] they were at the same height as those at the west corner and would seem to have made with them a uniform scheme; they were found only where the wall-face was plain and never in connexion with the half-column decoration.

The doorway in the recess (Pl. 29 *b*) was at a high level. Mud brickwork, bonded into the jambs, ran across it to a height of 0·90 m.; then came a course

[1] It would be absurd to try to estimate their height on the basis of Greek canons of proportion; the model being the palm tree, a very tall and very slender shaft is the most likely. In view of the height of the threshold the column would have to be fairly high if it were to support the lintel, as it probably did.

[2] *Ur Excavations*, vol. i.

[3] De Sarzec, *Découvertes en Chaldée*, pp. 62–5.

[4] *Ur Excavations*, vol. vii; cf. *A.J.* x, Pl. xxxvi *b*.

[5] J. P. Peters, *Nippur*, vol. ii, Chap. VI.

[6] When the discovery was made in 1924–5 I supposed them to be in the core of the wall, wrongly associating them with the burnt brickwork, which in fact is of later date.

of burnt bricks and above that mud bricks again and a top course of burnt bricks, giving a total rise of 1·60 m. from ground-level;[1] the burnt-brick pavement then ran back through a corridor (Pl. 31 *a*), narrowed by the projecting jambs of an inner doorway, which gave on to another narrow passage running north-east by south-west. At the north-east end of this a door in the south-east wall led into the open court of the Ziggurat terrace; at the other end there was a similar doorway and facing it a length of narrow passage enclosed on the north-west and south-west by the niched and buttressed wall which abuts on the half-columned façade of the bastion. This south-west passage must have been a staircase leading up to the roof of the tower. Of the two doors opening on the Ziggurat terrace that at the north-east end was the more important, as is shown by its elaborate reveals; entering it one could either go to the left to the stairs leading to the tower's roof or pass through the thickness of the tower to the gate in its outer face, where, obviously, there must have been some means of descending to the lower level of the Temenos. In the later period there was here a flight of brick stairs; in the Larsa age there is the blank wall with a drop of 1·60 m.; one can only suppose that there was then in the recess a wooden stairway which, like a drawbridge, could be removed in times of danger. At a later period a slight modification was introduced; on either side of the recess a mud-brick wall was built from the palm column against the side of the recess so as to reduce its width virtually to that of the doorway *plus* its reveals; since these walls rest on about 0·40 m. of accumulated rubbish they must be relatively late, although their bricks show them to belong to the Larsa time; they might have been added as supports for a reconstructed stairway in wood.

The internal passages of the bastion had been lined with burnt bricks 0·27 m. sq. × 0·09 m. resting on foundations of mud bricks 0·34 m. sq. × 0·09 m.; the two materials were not properly alined, the burnt brickwork, especially at the threshold of the main south-east door, overhanging by about 0·05 m., and between them was a rather heavy bed of mud mortar. On the south-east face of the building the mud-brick wall went down for 0·95 m., and then there came an offset 0·25 m. wide along which were set bricks on edge, leaning at a slant against the upper wall-face; at 1·95 m. below the offset there was an overhang of 0·05 m. and the wall continued down for another 0·80 m. The other face of the wall, inside the passage chamber, showed the same offset in the mud brickwork and an overhang 1·95 m. below it; on the north-west side of the chamber the mud brick went down for 2·30 m. below the burnt brick and then had an offset 0·20 m. wide; on the north-east the offset came at 0·95 m. and the overhang at 1·95 m. below it. All the walls started at the same foundation-level and all were constructed throughout of the same 0·34 m. sq. bricks. The filling between the walls was of mixed rubbish containing some broken burnt bricks with Larsa stamps. It would appear that the irregularities in construction are accidental and do not imply any difference of date. At 0·30 m. below the base of the walls came the remains of a wall built of mud bricks 0·30 m. long of which only a single course was left; the wall had been 1·95 m. thick and lay immediately below the middle of the Larsa passage chamber; against the wall was a layer of reeds (or matting) resting on light sandy soil, whereas the mud bricks rested on a bedding of thick grey mud. Judging by the brick standard this should be a wall of the Dungi period.

[1] As can be seen in the photograph (Pl. 29 *b*) and on the drawn elevation (Pl. 71) the brick courses do not lie flat throughout. The lower courses are flat, but there is an upward curve which increases with each course until the twelfth has an arc of nearly 0·10 m. Above this is a thick bed of mud mortar, thicker in the centre than at the sides, and the next course, which projects 0·05 m., has almost the form of a low arch. This construction goes right back along the passage; probably it is simply intended to give a camber to the passage floor.

The preservation of the half-column façade and of the palm columns is remarkable (of the latter that on the north-east is much destroyed, but its destruction was due to our workmen who were following the wall and failed to distinguish the column from the masses of fallen brickwork) and at first seemed scarcely consistent with the wall's having been an exterior wall exposed to the weather; but there cannot in this instance have been an original facing of burnt brick such as I posit for the Ur-Nammu terrace wall, since such would have obliterated the free columns, and though in the Larsa period there was in front of the bastion an important building on the lower terrace, the space between the two was too great for there to have been a roof above it protecting the mud-brick façade, and the fact that the two buildings are not in alinement is a further argument against a roof. Probably the explanation is the simple one that what is to-day visible of the building was not exposed for so very long a time to the effects of weather. It was built late in the Larsa period, and mud brick, if protected from above, does last, and keep in good condition, for a long while. As regards the palm columns, the most delicate feature of the façade, they were covered up during the Larsa period when the new walls were added on either side of the stairway, and the walls were found by us standing to the full height to which the columns are preserved. As for the main line of the façade, the destruction of the bastion fort with its immensely solid mass of mud brickwork would have resulted in the forming against it of a talus of debris amply sufficient to shield it to a height of two metres; that destruction probably took place when the walls of Ur were razed by Samsu-iluna, but may very well have been due to Hammurabi, since it would have been but a natural precaution to dismantle the main defensive works put up by his late enemies, and in that case the half-columned wall would have stood for less than seventy years, a lifetime not inconsistent with its present state.

Against the north-east face of the Ziggurat no Larsa remains were found. Undoubtedly there had been here buildings carrying on the Third Dynasty tradition, and they would have been at a slightly higher level than those of the Third Dynasty, but as the Neo-Babylonian walls went down as low as the Third Dynasty foundations nothing of the Larsa age could be expected to survive. A cutting made between the Neo-Babylonian altar at the stair's foot and the retaining-wall of the terrace showed how the edge of that terrace had been denuded and repaired in the Kassite and the Neo-Babylonian periods; to make good the level rough packing had been put in against the back face of the wall, and this packing contained in its lower section (3·00 m. below the Nabonidus floor) numbers of Larsa bricks; while it could not be affirmed, it is at least probable that these came from buildings in the immediate vicinity, i.e. from the sites of the Nannar and Nin-gal temples.

On the south-east side of the Ziggurat no remains of Larsa buildings were preserved on the terrace.

On the south-west side of the Ziggurat the range of intramural chambers built by Ur-Nammu would seem to have suffered severely, probably because of their exposed position along the edge of the terrace wall, and wholesale

rebuilding was required in the Larsa period. Of the work then done very little survives, but the wall lines as proved by their mud-brick foundations were followed by Kuri-Galzu, and it is the Kassite rather than the Third Dynasty ground-plan that must be taken as illustrating the Larsa age.

On the north-west side of the Ziggurat the Larsa remains were more considerable; in the north-west range of intramural chambers the walls nearly always preserved one or two courses of burnt brick resting either on the mud brickwork of Ur-Nammu or on new mud-brick foundations of their own. The internal arrangements were now somewhat changed. At the north-east end a new room (1) was contrived between the 'kitchen' block and the north-west outer wall, which was thinner than in the Third Dynasty building and so allowed more interior space; the drain which had run askew across the courtyard seems to have been abandoned and a doorway to the new room was made where it had run under the angle between the two buildings. Most of the burnt brickwork of this room had disappeared, but enough of the wall-face remained at the south-west end to prove its existence; the new south-west wall was much thinner than had been the wall of the Third Dynasty sanctuary running on the same line. The 'sanctuary' was abolished and instead of it there is a normal chamber (2) opening not on the courtyard, but into the adjoining room (3) (a re-used door-socket stone of Ur-Nammu was found here in position), the only chamber to which an outer door was found. In the wall were two or three stamped bricks of Sin-idinnam. There must have been a door from the court into one or other of the next two rooms (4 and 5), but all traces of it had vanished; none of the rooms had floors other than of clay; the small room (6) was largely taken up by a vertical ring drain of the Third Dynasty (Pl. 16 *a*): in its door-jamb was a stamped brick of Sin-idinnam, measuring 0·28 m. × 0·18 m. × 0·09 m. Beyond this, in the corner of the range, was a very narrow passage in the wall-thickness which must have been a staircase; the Ziggurat terrace was always regarded as the innermost line of the city's defences and these intramural chambers with their blank outer wall rising from the terrace edge are in the nature of a rampart, and their flat roof would naturally have served a military purpose; a staircase leading up to it is therefore an essential feature. Here the entrance to the stairway is from the south-west, the long chamber (7), of which the wall-faces were very rough, probably contained a flight of steps resting on a solid filling retained by the wall at the south-east end; beyond this wall the narrow passage would seem to have continued, and the analogy of the private houses would show that for this section the stairs were of wood running above a small chamber. Below the corner foundations was a brick foundation-box of Larsa bricks, empty.

Of the 'kitchen' block not a great deal was left. The general arrangement was that of the Third Dynasty, but the rebuilding of the north-west wall reduced the size of the north-west chambers and room (5) was now entered from room (3) instead of from room (2), so that the latter would seem to have lost the character of a central court which it had possessed before. But in this respect the plan as published must be accepted only with a certain

reserve. According to our conventions, solid black on the plan indicates burnt brick, and along most of the walls this material was found consistently surviving to the minimum height of one, two, or three courses: but since in Larsa buildings the floor or pavement generally comes against the middle of the third course of burnt brickwork in the walls, and since it is very common for doors to have raised thresholds, i.e. for the burnt-brick foundations to be laid continuously across the door-passage to a height of four courses, there must always be an element of doubt as to the position of doors in the case of a building so much ruined as is this. A gap in the burnt brickwork shown as a door *may* be accidental; the fact that the burnt brickwork four courses high runs uninterruptedly does not preclude the existence of a doorway, although it gives no clue as to its existence. In the case of the 'kitchen' building there must have been doorways to rooms (1) and (4) and between (2) and (3); there *may* have been a door from (2) to (5), and if there was, the likeness to the Third Dynasty structure would have been very close. The back or north-east part of the block was completely destroyed, and it was impossible to say whether or not there were more rooms behind (4) and (5). None of the burnt bricks in the walls were stamped, but they were obviously a mixture even while all were of the Larsa period, and during that period reconstruction would seem to have been frequent. For one phase, however, proof of authorship was forthcoming. At either end of the long wall dividing rooms (2) and (3) from rooms (4) and (5) there were found cut down into the Third Dynasty mud-brick foundations boxes of burnt brick and bitumen each containing two long copper cylinders (Pl. 18), of which three bore the dedication-text of Nur-Adad (see above, p. 38). As foundation-deposits these metal cylinders, 0·275 m.–0·33 m. long and 0·065 m. in diameter, are unique; their inscriptions are invaluable as giving not only the name of the king who repaired the 'kitchen', but the purpose of the building itself. The text is identical with that on the clay cones of Nur-Adad (*Ur Texts*, vol. i, Nos. 112, 124) found close by in the ruins; these were not *in situ*, and it had therefore been impossible to be sure that they belonged to the building, but the discovery of the metal cylinders proved the point. For further notes about them see p. 38.

CHAPTER V

THE ZIGGURAT TERRACE: THE KASSITE BUILDINGS

OF Kassite work on the Ziggurat itself there remains no trace whatsoever, but on the surrounding terrace and in the great courtyard of Nannar to the north-east of the Ziggurat the ruins of this period are better preserved than those of any preceding age.

From the days of the First Babylonian Dynasty, when feeble efforts were made to repair the damage done to the city by the troops of Sumu-ilu after the rebellion made in his eleventh year, the sacred buildings of Ur seem to have been altogether neglected by the central government. It is to be presumed that the temples still functioned, and some part of the temple revenues must have been used by the priests for the material upkeep of their fabric; occasionally we come across ruins of shoddy brickwork which may be due to such local activities; but there is not found a single stamped brick or dedication-text of any royal builder between Hammurabi, at the beginning of the nineteenth century B.C., and Kuri-Galzu in the fourteenth. Then, for some reason or another, the restoration of the ancient city was undertaken and carried out in the most wholesale manner; there are very few temple sites at Ur on which the stamped bricks of Kuri-Galzu do not occur. While there is some doubt as to whether this energetic builder was the first or the second king of his name, it appears more probable that he was Kuri-Galzu II, who reigned at Babylon in the fourteenth century B.C.

Extensive as the king's programme was, perhaps because it was so extensive, the quality of it generally leaves much to be desired. The walls that seem to be so solid generally consist of two skins of properly laid brickwork enclosing a core of brick rubble and mud—the Third Dynasty fashion of laying brick courses right through the wall's thickness has been abandoned in favour of the cheaper method. The broken bricks of the core are for the most part old material taken from the ruined walls which were being replaced, and even in the wall-face there may be bricks of many different ages and of various sizes indiscriminately mixed. Bitumen is very seldom used as mortar; its place is taken by mud; where it is used it is mixed with a wholly disproportionate amount of loam and then occurs only on the face of the wall, never in the core, so that its employment would seem to have been dictated by considerations of appearance rather than of utility. On the other hand, Kuri-Galzu did employ burnt bricks for most of his work and did not often condescend to the mud brick which was to become the normal material of the Neo-Babylonians; although, therefore, his constructions show a marked decadence if contrasted with the better buildings of an earlier date, the extreme of decadence was by no means reached in his time: moreover, a

remarkable temple found at Warka and scattered fragments of similar work at Ur[1] prove that the Kassite king if he did not introduce did at least employ methods of decoration in moulded brick of a most striking sort.

The Ziggurat Terrace (Pl. 72).

On the north-west side the retaining-wall of the terrace was refaced by Kuri-Galzu with a revetment or *kisu* of burnt brick *c.* 1·25 m. thick; it was provided with shallow buttresses similar to those of the older wall which it masked, but the batter of the wall-face was much less pronounced, its slope being 9 in 90 as against 14 in 90 for the Larsa front, and 32 in 90 for that of Ur-Nammu. The revetment, built with mud mortar, was in very bad condition (see Pls. 23, 24 *a*) and whole sections of it had been removed in later times by plunderers in search of bricks. The bricks measured 0·32–0·35 m. sq. ×0·08 m. thick.

The casing of burnt brick was continued by Kuri-Galzu round the old mud-brick bastion of Warad-Sin; the front line was thrown forward by some 2·00 m.; against the old decorated front was a mixture of mud bricks and Larsa burnt bricks taken from the old *kisu*, while the new façade was of burnt bricks specially moulded to reproduce the Larsa scheme of attached half-columns and niches. The front wall was comparatively thin and having but loose packing behind it had suffered severely (Pl. 31 *a*), only one or two courses of bricks surviving in some sections, but there was enough to show the precise nature of the reconstruction. One important change was made. The central recess in the Larsa front was filled in with rubble and mud brick and the new line continued straight across it, interrupted by a gateway whose plain jambs projected slightly instead of falling back in reveals; in the door passage a solid flight of burnt-brick steps (Pl. 31 *a*) took the place of the wooden stairs which we assume in the case of the old building. The internal arrangements on the ground floor of the tower remained much the same as before, but the interior walls were now lined with burnt brickwork of the Kuri-Galzu type resting on and slightly overlapping what was left of the Larsa.[2] It is to be noted that the steps were built before the staircase walls were lined with burnt brick, the lining resting on the treads and not going down below them.

On the top of the terrace the range of chambers along the north-west side was rebuilt by Kuri-Galzu, the remains of the Larsa walls serving as foundations for the new work; there was consequently no change of plan. In room (2) there was a hearth roughly made of bricks set on edge in the north corner, and near it, and in the south corner, were clay pots of types IL 40 *a*, IL 40 *c*, IL 107, and IL 138, and two which were too broken to type. In the second chamber from the north-east end of the range (3) there was on either side of the doorway a brick impost-box resting on a base of limestone; the two stones (U. 2761) proved to be fragments from the stela of Ur-Nammu.

[1] See *Ur Excavations*, vol. viii, on the temple E-nun-maḫ.

[2] The lining of the staircase is of bricks 0·31–0·32 m. sq.×0·085 m.; beyond the stairs the passage-lining retains its Larsa brickwork (0·26–0·29 m. sq.× 0·09 m.); the stair-treads are of mixed type, but in the upper steps the size 0·31 m. sq. (with exceptions attaining 0·34 m.)×0·075 m. predominates.

The 'kitchen' block also was restored in the Kassite period without any change of plan (Pl. 17); most of the surviving walls, which always follow the old lines, have in their upper courses bricks which if not stamped by Kuri-Galzu are at least of the type employed by him, and a number of stamped bricks were found loose in the 'kitchen' ruins, while one occurred *in situ* in the wall of the central chamber (4) of the north-west range and another (size 0·32 m. sq. ×0·075 m.) in the westernmost chamber (6) where the greater part of the construction was in older bricks measuring 0·24–0·25 m. × 0·17 m. ×0·075 m. The copper cylinder with the inscription of Marduk-nadin-aḫe found in the corner of the 'kitchen' (see p. 47) shows that further repairs were carried out later in the Kassite period, but again they involved no change of ground-plan.

On the north-east side of the terrace no buildings remained. Behind the sally-port the surface was very much denuded and, as can be seen from the plan, the retaining-wall as far as the central staircase of the Ziggurat had been ruined away below the level of the foundation of anything that may have stood on the terrace, and on the south-east side of the central staircase the denudation was even more serious. In the angles between the Ziggurat staircases there were no remains of the Kassite period at all; in this case it was not the result of denudation but of destruction; the foundations of the Neo-Babylonian buildings here were carried down to such a depth that all relics of the preceding age had been eradicated.

On the south-east side of the Ziggurat the level of the terrace was no higher than that of the Temenos area beyond it, and the enceinte wall therefore was not a retaining-wall as it was on the north-west. Consequently here repairs of the old work did not involve the addition of a revetment, but merely the rebuilding of the wall on the old foundations, and the line of the Larsa frontage remained that of the Kassite, and its character was the same. The foundations of the south-west half of the range were intact, the burnt-brick walls of Kuri-Galzu resting on the stumps of the Larsa walls which they replaced. From the south corner there were three chambers in succession and then an entry to the terrace from the 'Sacred Way' which skirted it on the south-east. The doorway was flanked by boldly projecting buttresses resting on the Larsa revetment of the terrace wall, between which was a forecourt narrowing down to the doorway proper; these had formed no part of the Larsa plan, but were an addition to it made by Kuri-Galzu: the door led into a guard-chamber set between the two walls of the enceinte, and a second door facing it opened on the courtyard of the temple of Nin-gal; by the jamb of the entrance door was a brick hinge-socket box with hinge-stone of Ur-Nammu, re-used: by the inner door was an empty socket-box and against the north-east jamb a square brick base above floor-level.

To the south-west of the entrance were the three intramural chambers, whose walls in all cases showed Kuri-Galzu brickwork overlying the remains of precisely similar walls of Larsa date. The inner wall at any rate would seem to have been carried up in mud brick, the burnt-brick courses above floor-level being only five or six in number. The floors were of clay; in the

central chamber (Pl. 24 *b*) there was a circular patch of burnt-brick paving, carefully laid, which might have been the base of a press or mill; but apart from that there was nothing to identify the use of the rooms.

To the north-east of the entrance the Kassite wall has been destroyed and there remain at best the mud-brick foundations or fragments of the Larsa wall which was followed by the later builders. Behind the temple Dublal-maḫ (see the plan on Pl. 72) there was left the corner of the burnt-brick and bitumen pavement of the intramural chamber at the corner of the terrace, so that it could be shown that the double wall was continued beyond the front line of the Nin-gal temple; also the podium built by Kuri-Galzu round the Dublal-maḫ was continued to the south-west by a buttressed wall of burnt brick which was in reality a revetment of the old terrace wall. It would seem that this buttressed wall merely contained the terrace and did not rise to any height; the terrace wall properly so-called was set back from the edge of this wall, so that the narrow passage which ran round Dublal-maḫ along the top of the podium was continued here against the terrace wall-face and led to a doorway in that wall. That there was a doorway seems to be proved, or is at least made probable, by the small flight of brick stairs which comes against the south-west wall of the Dublal-maḫ courtyard; it is possible that this stairway (which was found by us remarkably well preserved) led only to the passage round the podium, but it seems more likely that it served also a doorway through the terrace wall, as suggested on the ground-plan on Pl. 72. On that plan it is easy to follow the diagonal course of the torrent-bed which has made such havoc of this part of the site; the whole of the east corner of the terrace has been swept bare of remains.

On the south-west side of the Ziggurat (Pl. 74 *a*) the terrace wall lay under the inner wall of Nebuchadnezzar's Temenos, and only at the south-east end could it be followed so far as the inner face was concerned, for at the north-west end, owing to the different angle at which the Neo-Babylonian work ran, even the inner face was obliterated by it, and here the late builders had deliberately destroyed the ends of the cross-walls of the chambers also in order to lay their own foundations. Of the inner wall the inner face was preserved at the south-east end, but was represented by no more than one or two foundation-courses of burnt brick, while the outer face could not be followed at all: farther towards the north-east the whole breadth of the wall remained in some sections, whereas in others it had altogether disappeared. The first chamber from the line of the south-east range was reasonably intact; the face of its north-west wall was missing, but the outside of the wall was left incorporating the vertical drain-shaft of Ur-Nammu; it was evident that both the Kassite and the Larsa builders had here faithfully followed the lines of the Third Dynasty enceinte. Beyond this was (2) a gap where no building of any period could be detected, but through it ran the great Ur-Nammu drain; it was possibly reserved as an open space, though it is also possible that the existence of the drain accounts for the disappearance of buildings whose foundations would necessarily have been somewhat shallow. Then come five intramural chambers all tolerably well preserved in ground-plan,

but the walls seldom rise above floor-level, and it was therefore not possible in all cases to discover the whereabouts of the doors, of which there must have been two opening on the terrace; if there had been brick pavements they also have disappeared. Embedded in the wall of the first chamber (3), probably as a votive deposit, was a bronze socketed adze-head, U. 6927. The foundations break away a little short of the gateway in the Nebuchadnezzar wall, and it is tempting to assume that this is because there was a corresponding gateway in the Kassite period. But that can scarcely be the case. In the Neo-Babylonian period the levels inside and outside the Temenos wall were virtually the same and a gateway was therefore feasible; in the present case we are dealing with the wall not of the Temenos, but of the Ziggurat terrace which stood above it, and outside that wall there was a drop to a much lower ground-level, so that a gateway is not really suggested by any Neo-Babylonian analogy and is inherently improbable. Further, the next surviving section of the inner wall of the Kassite age forms one side of a room (9) of which the south-east end has been broken away, but even if it were no longer than is the existing wall-fragment the return would come immediately in front of the Nebuchadnezzar gate, so that no argument for a gate having existed anciently in the same position would stand. The only proper deduction from the facts is that the wall with its range of chambers continued unbroken along the whole front of the Ziggurat.

There is, indeed, a slight change of direction, as there is again farther along the line, but this need not imply the presence of a gateway through the wall; the mere fact that the terrace front was originally built in sections by different gangs of men working independently would fully account for such small errors of construction. It must be remembered that the terrace wall of Ur-Nammu was but a recasing applied to an older structure which was more or less in ruins and may have presented a very uneven face; the new work was likely enough to be influenced by such irregularities and to reproduce some of them, and the later terrace fronts of Larsa and of Kassite date would be similarly influenced in their turn. Again, the front of the line of chambers faced on the Ziggurat whose wall, as will be explained, is a curve, not a straight line, and the fact may have upset the calculations of the builders of the chambers just as it did ours when in the early days of the excavations we used it as a base for measurements; the attempt to make the chamber front parallel with the wall of the Ziggurat may be the complete explanation of the crookedness of the former. It is really the fragmentary state of the ruins that makes decision difficult. For the central block we have the remains of two rooms, and then all evidence fails us. Immediately opposite the west corner of the Ziggurat there is a right-angled piece of wall built of bricks unstamped but seemingly of Kassite date, but it is a flimsy wall quite unlike those of the main range and it runs at a quite discordant angle; it can hardly be taken into account in reconstructing the plan. Much more important is what follows. Along the whole of the south-west side of the Ziggurat, just clear of its foundation-offset, runs a shallow drain built of Larsa bricks, but obviously repaired in the Kassite age; just beyond the west corner it bends

outwards to the south-west (Pl. 28 *a*) and can be traced to within the frontage line of the intramural chambers. Here the bitumen-lined channel has been remade with Kassite bricks. It is evident that here we have a feature corresponding fairly closely to that at the south-east end of the range where the big Ur-Nammu drain from the south-east side of the Ziggurat runs through what was probably a gap in the line of buildings to the terrace wall; at the north-west end we find beyond the drain another section of the range of chambers which shows a clean wall-corner (12) and proves that there was an open space between it and the vanished buildings to the south-east. The new block, of which half the south-east and all the south-west wall had perished, gives an entrance from the large court on the north-west side of the Ziggurat (by the doorway was a re-used hinge-stone of Ur-Nammu) leading into a room (13) from which a staircase runs up on the right; the five lowest treads are preserved and give an average rise of 0·10 m. per tread. There is no reason at all to suppose that there was a second story above the chambers in the thickness of the terrace wall, but they were flat-roofed and the staircase was required because the roof served as a post of vantage for defending troops should the city have been captured and the defenders driven back to their last line. The military importance of the Ziggurat and its terrace must not be overlooked. In the intramural chambers of the First Dynasty terrace wall there were found stores of sling-bolts and other missiles; the great north-west bastion built by Warad-Sin and repaired by Kuri-Galzu was of an essentially military character, protecting the entrance to the terrace on its most vulnerable side. The terrace was, as it were, the keep of the castle of which the Temenos was the inner and the walled town the outer bailey, and just as the patron god of the city led its forces in war, so his head-quarters formed the town's ultimate stronghold.

The Nin-gal Temple of Kuri-Galzu (Pl. 73).

It is probable that there had always been a temple of Nin-gal on the south-east of the Ziggurat terrace though, it must be admitted, the material evidence for the existence of any early building is very scanty (see above, p. 32). Between the time of the Third Dynasty and the fourteenth century B.C. there had been here no rise of ground-level; the best foundation offered to a new builder was the solid bedding of mud brick laid by Ur-Nammu, and it is natural enough that the Kassite architect should have made a clean sweep of any ruins of older work that might have encumbered his site, and the more so as the building which he contemplated was, so far as we can judge, of a novel plan. Stamped bricks in the walls of the temple give the name of Kuri-Galzu and the dedication to Nin-gal (*Ur Texts*, vol. i, No. 156), and the later foundations of Sin-balatsu-iqbi and of Nabonidus show that there was a definite tradition whereby Nin-gal had her shrine in this particular area; but the actual building of Kuri-Galzu is in many respects peculiar.

The ground-plan shows an open courtyard at the north-east end with chambers along its north-west side: at the south-west end is the sanctuary

block, and the chambers continue alongside this also. It is noticeable that the sanctuary building is an independent constructional unit, complete in itself, not bonded into the rest of the structure, which simply encloses it. This building is set right up against the face of the terrace wall, and its own south-east wall is therefore adapted to the buttresses of the terrace wall; on the south-west its back wall is the true limit of the temple and there are merely cross-walls abutting on it; on the north-west it is enclosed by the contemporary range of chambers and on the north-east by the court.

The new outer wall on the north-west has burnt-brick foundations of from three to five courses, above which are mud bricks 0·34 m. sq. ×0·10 m.; it is broken away before reaching the north corner of the building. The whole north-east front of the building was missing. In the courtyard the pavement of the Kuri-galzu period was badly preserved on the south-east, but a stretch of rougher work in burnt brick against the inner face of the terrace wall seemed to be the remains of the foundation of a mud-brick wall continuing the line of the south-east wall of the sanctuary block (as the north-west wall of the court continues that of the sanctuary), but this again breaks off short of the east corner of the court. The brick pavement, coated with bitumen, could be traced for 9·50 m. from the front of the sanctuary, where it came up against a low mass of brickwork 1·20 m. wide and 5·00 m. long (bricks 0·37 m. sq.), with a straight face at its south-east end beyond which the pavement continued unbroken; this was possibly a wall, but much more probably a base or altar; beyond it the pavement continued for 4·75 m. to the north-east. A second brick base or altar seems to have stood 1·10 m. to the south-west of the long base, alined with the south-east jamb of the sanctuary door, but only one corner of its brickwork remained, rising two and a half courses above pavement-level, and its original dimensions could not be ascertained; and there was a third 0·25 m. to the north-east of the long base, measuring 2·75 m. ×1·85 m., now ruined to pavement level; this is very rough and seems to be the filling of something whose face has disappeared. The forecourt was, of course, entered from the 'Sacred Way' by the great double gateway in the south-east wall of the terrace; that this wall was masked by the new mud-brick wall but the entrance left open seems to be confirmed by our finding on the line of the inner face of the north-east jamb of the inner gate, and 3·50 m. from it, a hole in the pavement of the court (and in the Third Dynasty mud-brick platform on which the pavement and the temple rested) in which was a door-socket, 0·40 m. below the floor-level; this would seem to imply a door set against the inner face of the mud-brick wall. The door-socket, U. 6742 (*Ur Texts*, vol. i, No. 87), has been re-used, being originally a dedication not to Nin-gal, but to Nannar (by Enlilla-nishag, governor of Nippur in the time of the Third Dynasty of Ur). At the same time it is most probable that there was a second entrance to the court from the Ziggurat terrace, in its north-east wall. The long brick base is roughly central to the sanctuary door, and it is reasonable to assume that the court-yard continued some little way farther to the north-east and then had a pylon entrance in line with the axis of the sanctuary and the base; but of this all

traces have disappeared and the reconstruction is purely conjectural; the pavement here simply came to a ragged end.

The pavement of the court was of two courses of burnt brick, the lower course roughly laid, the upper course carefully set in bitumen. In the lower or foundation-layer we found, near the north-east edge, a large fragment of the stela of Ur-Nammu, U. 18526. Near the north-west side was a well—the old well of Ur-Nammu which probably in his time, and again in the Larsa period when it had been partly relined, had served a temple of Nin-gal. It had now to be repaired: the workmen had cut a long sloping trench from near the east corner of the Ziggurat, starting at ground-level and deepening as they went till they reached a depth in the well's neighbourhood of 2·10 m., when they widened out into a circular pit 6·70 m. in diameter round the well itself; down to 2·70 m. below this level the old masonry was destroyed and new brickwork substituted for it (Pl. 69), and in this there were left trough-like recesses wherein were placed the dedication-tablets of Kuri-Galzu; these were afterwards removed and tablets of Sin-balatsu-iqbi put in their stead (see above, p. 33). The pit was filled in with properly coursed mud brickwork (bricks 0·34 m. sq. ×0·10 m.). At the south-west end of the court the pavement, of bricks 0·41–0·42 m. sq., was well preserved, extending up to the façade of the temple; the corners of the building were relieved by square buttresses and in the centre wide buttresses projected on either side of the doorway to form a pylon entrance.

The walls of the temple had in most cases been destroyed almost to ground-level, only two or three courses of brick remaining; only the north-west wall was standing to the height of nearly a metre, and since this was in burnt brick throughout it is fairly certain that the whole building was of burnt brick and not of mud brick on burnt-brick foundations, as was the enceinte wall; many of the bricks both in the walls and in the pavements bore the stamp of Kuri-Galzu. The entrance-room (1) was long and narrow, a mere passage extending to the north-west outer wall; the floor was very rough, of bitumen laid over bricks and brick rubble, not all of one type; here as in most of the rooms the floor ends close to but just short of the walls and the bitumen covering curves down towards the wall-foundation. Against the south-east jamb of the entrance door was a hinge-box containing a re-used door-socket of Ur-Nammu, U. 3032. The bricks in the walls are mixed, many being 0·28 m. ×0·16 m., a Larsa measurement, and of the texture and colour of Larsa bricks, while others were 0·34–0·35 m. sq. × 0·10 m. thick. Of no wall were there more than three courses left. In the room were found a fragment of a finely worked vase in light-coloured obsidian and a piece of shell inlay, part of a *kaunakes* skirt, the latter perhaps of much earlier date. Room (2), in the east corner of the building, had a pavement of burnt bricks 0·42–0·45 m. sq. once overlaid with bitumen which had nearly all perished; the floor stopped at 0·20 m. from the north-west wall. Against the north-east jamb of the door was a box made of Ur-Nammu bricks set below pavement-level; it was empty except for a fragment of gold leaf and a lapis-lazuli bead; close to it were many other beads of

carnelian and lapis-lazuli; the box, which was in a hole dug down into the Third Dynasty mud-brick platform, touched and rose above the footings of the Kuri-Galzu wall and must therefore have belonged to the late period in spite of its brick-stamps. There were four courses of burnt brick in the walls, two above and two below pavement-level. Room (3) and room (4), completing the south-east range, presented no features of interest; in each the pavement was of bricks 0·41–0·42 m. sq., in the former overlaid with bitumen; one brick, U. 3252, bore the normal E-gish-shir-gal text of Kuri-Galzu: in room (3) the walls were reduced to a single course of bricks, in room (4) there was one course above pavement-level and three below; the bricks in the walls were mixed and broken.

The central room of the temple (5) was curiously irregular: it is supposed to be square, but none of its angles exactly correspond; it has a door in each wall and in neither case are the doors opposite to each other; it is quite small, but the piers which form its four corners are disproportionately solid, yet here again the dimensions of no two are alike. The room had a brick pavement over which was spread a layer of loam and then a layer of bitumen; almost in the middle there are the remains of what was presumably an altar, though now there are left only three courses, one of which is a projecting plinth, rising above floor-level; it was built with bitumen, and the bitumen on the top of the remaining brickwork preserves the imprint of a stamped brick of Ur-Nammu. It is difficult to say whether the sanctuary of Nin-gal is to be identified with room (6) on the south-west or with room (8) on the north-west. In favour of room (6) it might be urged that against its south-east door-jamb in room (5) there is brickwork, projecting into the door passage, which might be the base of such an altar as we have against the door of the room of sacrifice in the mausolea of Dungi and of Bur-Sin (see *Ur Excavations*, vol. vi); further, the subsidiary room (7) opening off the sanctuary has its parallel in the north-west shrine of the Third Dynasty and Larsa Gig-par-ku (see vol. vii); lastly, there was in the south-west wall of room (6) a recess wherein was set a small base or altar of burnt brick, now standing two courses above pavement level (Pl. 25 *b*); if room (6) be really the sanctuary the axis of the temple is south-west by north-east, and in spite of the fact that the doors are not in line, the position of the sanctuary at the end farthest from the main entrance would be in accordance with precedent. The room presented no other features of interest; the pavement was of the normal 0·41 m. sq. bricks (which were missing at the south-east end), the walls stood one or two courses above floor-level; the whole face of the north-west jamb of the door communicating with room (5) had perished. Room (6) had a door-socket of Ur-Nammu (U. 3172) re-used. Room (7) had bitumen covering its brick pavement.

The doorway between rooms (5) and (8) is so wide that they can almost be described as a single room partitioned by buttresses. Against the south-west buttress, in the west angle of room (5), a rectangle of brickwork projects beyond the buttress face; where everything is ruined down almost to floor-level it is not easy to distinguish what is a wall from what is not, but it is fairly

clear that this block of masonry, partly obstructing the door, cannot have risen very high, and it is probably the foundation of a brick pillar altar or base such as stands by the doors of the shrines in the Third Dynasty royal mausolea. The floor of room (8) was paved with the usual 0·41 m. sq. bricks; under it, in the north corner, was a drain made of a single large Kassite jar, inverted, with its base knocked out. In the back wall, immediately opposite the entrance, there was a niche 0·25 m. deep and 2·98 m. long, entirely filled by a burnt-brick base or altar which projected 0·90 m. into the room and stood to a height of 0·90 m., the same height as the wall behind it. This base had been re-modelled. Originally it had been only 0·50 m. deep and 0·40 m. high, and at 0·15 m. from its north-east end there had been a projection 1·00 m. wide with a total depth of 0·90 m. (see plan, Pl. 73, and elevation, Fig. 3); this was built with bricks measuring 0·33 m. sq. ×0·09 m. At a later time fresh brickwork (bricks 0·395 m. ×0·07–0·08 m., with half-bricks at the north-east end) was added so as to bring the whole front forward to the line of the original projection, and six courses were added to its height. Embedded in the brickwork of this now rectangular mass, seven courses from the existing top, were found a (broken) mud figurine of a man inscribed with the titles of a nameless official (U. 3327, see *Ur Texts*, vol. i, No. 160), a small crescent of thin copper-plate and one of gold (U. 3308), some fragments of embossed gold leaf, probably the casing of a cylinder seal (U. 3306, 3307, 3309, 3310), some gold wire and gold leaf (U. 3311–13), some fragments of a variegated glass bead (?), perhaps the cylinder to which the embossed gold foil had belonged, fragments of a very small vase of variegated glass, a silver tumbler (U. 3305), a small glazed bottle (U. 3314 A), a small glazed cylindrical pot (U. 3304), and a small glazed model of an altar (?) (U. 3314 B); all these objects were from the dedication-deposit set between the courses of the bricks. Beneath the lowest course of bricks was found a copper statuette (U. 18628). In front of the altar, between the door-jambs, were two curious cylindrical clay vases or vase-stands. Room (8) was certainly an important shrine in the Nin-gal temple and in all probability was the sanctuary of Nin-gal herself; in that case its position, with the axis of the sanctuary and pronaos at right-angles to that of the entry, is without parallel amongst the temples excavated at Ur.

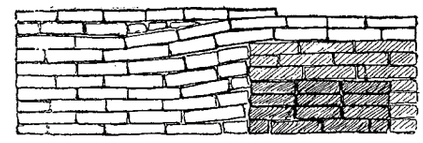

FIG. 3.

The character of the ground-plan calls for comment. The temple is virtually square; in the middle of it is a small room also approximately square enclosed by remarkably heavy piers; between this and the outer walls is a narrow space which on three sides, north-east, south-east, and south-west, is almost a continuous passage, the rooms with one exception opening out of each other. On the analogy of the standing arch over a doorway in Kuri-Galzu's Dublal-maḫ we can safely restore arches over the doorways here; and the series of long, narrow chambers inevitably suggests a continuous vault running round three sides of the building; it is tempting to assume that

while the sanctuary (room (8)) was roofed with a separate barrel vault the central square chamber was surmounted by a dome; the theory would explain the heaviness of the piers, especially if it be allowed that the builders did not have too much experience of that form of architecture and would therefore be nervous about the stresses. Examples of domical construction are already known for the predynastic age (*Ur Excavations*, vol. ii, pp. 234–5), and for the Third Dynasty (see above, p. 34), so that there seems no reason why it should not have been employed in the fourteenth century B.C.; the restored section on Pl. 73 is probably not far from the truth.

At the back of the temple the space between its south-west wall (of which the outer face was of mud brick with the usual vertical niches) and the south-west range of intramural chambers was divided by cross-walls into three rooms entered from the Ziggurat terrace (see Pl. 72); they possessed no features of interest; the plan shows a triple gateway enclosing two guard-chambers beyond which is an open (?) court giving access to four of the intramural chambers in the terrace wall; it is possible that these chambers were in the Kassite period used for the storage of more precious objects requiring special guard.

CHAPTER VI

THE ZIGGURAT TERRACE: THE NEO-BABYLONIAN BUILDINGS

The Terrace Wall (Pls. 74 *b*, 75).

BY the Neo-Babylonian period there had been so radical a change in the levels of the area surrounding the Ziggurat that the problem facing a restorer was completely different from what it had been in Kuri-Galzu's day. There had been a rise in the level of the terrace itself, but the process had been faster and much more considerable outside the Temenos, where more flimsy residential buildings had succeeded each other more rapidly; as a result of this, on the north-west side of the Ziggurat the step from the terrace to the level of the Temenos beyond had been obliterated and the quarter outside it had actually risen above the level of the terrace, which was now a hollow instead of an eminence; and on the south-west side the ground stretched virtually level from the foot of the Ziggurat to the City wall.

On the south-west side the enceinte wall of the terrace had always risen directly from the lip of the Temenos wall; now, when the latter was no longer a retaining-wall for a raised platform, the two were identical and the south-west boundary of the Ziggurat terrace was simply a section of the new Temenos wall of Nebuchadnezzar. The wall itself, therefore, with its gate, need not concern us here,[1] and it is only the buildings on the 'terrace', between the Temenos wall and the Ziggurat, that will call for description.

On the north-west side the conditions were more difficult. Here there had been on the north-west, beyond the terrace limits, a narrow platform at a lower level enclosed between them and the Temenos wall. This had now been obliterated, as had the difference in level between it and the residential area beyond, and there is really not enough to show whether the old distinction between the two terraces was maintained in the Neo-Babylonian rebuilding or whether the two were thrown into one; the new Temenos wall was set back somewhat behind the old line and its massive construction took up much of the space formerly occupied by the outer terrace, and there remained no trace of any interior wall defining the Ziggurat terrace proper. At the same time it is quite possible that there was a wall running from the east angle of Nebuchadnezzar's corner fort to the south angle of whatever replaced the old Warad-Sin bastion and that the proportions of the Ziggurat terrace therefore remained unchanged.

On the north-east side the raising of the level of the Great Court (see p. 96) did not involve any change in the plan of the chambered wall between it and the Ziggurat terrace. Sin-balatsu-iqbi had rebuilt on the foundations of Kuri-Galzu, and Nebuchadnezzar simply carried his brickwork higher. None of his building actually survives, but about the character of it there is no doubt.

[1] The Temenos wall will be described in detail in vol. vi.

On the south-east there remains part of the terrace wall which served also as the containing-wall of the Nin-gal temple; at the south-west end, beyond the back limits of the temple proper, it was perfectly normal, a double wall with intramural chambers, its outer face relieved by shallow buttresses; where it served as the wall of the temple the outer face was decorated with the vertical grooves peculiar to sacred buildings and it was really a single wall, for the series of chambers was not continuous, the chambers that did exist were not of regulation size, and the inner wall, where there was one, had none of the character of the inner terrace wall, but was simply an interior wall of the temple. It is obvious, therefore, that the Nin-gal temple was designed and built as part of the Ziggurat terrace and was not a feature added after the terrace was complete. Beyond the temple the wall is completely destroyed, up to the (enlarged) temple of Dublal-maḫ; this is due to denudation by a watercourse.

The Nin-gal Temple (Pl. 75).

During the long decadence of the later Kassite period Kuri-Galzu's temple of Nin-gal built on the south-east side of the Ziggurat platform had fallen into ruins, and no attempt seems to have been made to restore it. In the seventh century only a few courses of burnt bricks remained of its walls—they would appear to have been intentionally razed—and these were covered by a thick deposit of rubbish. Sin-balatsu-iqbi was not tempted to restore the old building; he preferred to utilize its site for an original work of his own planning. The mud-brick enceinte walls were rebuilt, but instead of clearing the area inside them the builders levelled it and raised it with fresh deposits of rubbish, making of the interior a platform more than a metre and a half high whereon the new temple was to stand.

The temple was of conventional Neo-Babylonian design. At the north-east end was the paved forecourt with a pylon entrance, chambers on either side, and a well on the north-west; it was in the walls of the well-head, rebuilt by Sin-balatsu-iqbi, that we found the bricks with inscribed dedications to the minor deities worshipped together with Nin-gal in the temple (see above, p. 33, and *Ur Texts*, vol. i, Nos. 173–82). An enormously solid pylon-gate led into the antechamber, flanked by smaller doors giving on the side chambers; behind the antechamber a flight of brick steps went up to the sanctuary, raised above the main level of the temple; inside the sanctuary a screen wall of burnt brick built as three sides of a quadrangle open to the steps formed the *naos* wherein stood the statue of the goddess. On either side of the antechamber, and communicating with it, were subsidiary rooms which had wide doorways leading to inner rooms occupying the west and south corners of the building; that in the south was prolonged by an annexe at a slightly higher level cut into the enceinte wall (Pls. 26, 27).

The walls were of mud brick throughout, the sole exception being the screen-wall of the *naos*; the bricks were of a sandy nature, mixed with a good deal of impurities, very soft and friable, perhaps the worst bricks found by

us; the walls were destroyed to pavement-level and were generally followed only by the outlines of the pavement which, being of burnt brick, were fairly well preserved. The pavement bricks of Sin-balatsu-iqbi measured 0·26 m. sq. (or 0·255 m. sq.) ×0·07 m.; the measurements of his mud bricks could not be ascertained, the individual bricks being indistinguishable.

A century later the building was repaired by Nabonidus. All the pavements were relaid, the new bricks (0·375 m. ×0·35 m.) resting almost directly on the old; the pylon of the temple façade was refaced with burnt brick, but otherwise little change can be detected in the walls or in the ground-plan generally; in most cases, therefore, one description will serve for the two periods.

The north-east wall of the whole building was really that of the Kuri-Galzu temple rebuilt, and rebuilt by Sin-balatsu-iqbi; it is of mud brick, but incorporated in it is (room (9)) a heavy vertical drain of burnt brick (Pl. 25 *a*) which took the drainage of the flat roof and brought the water down and into the conduit that runs between the temple and the Ziggurat. Even the chambers lining the wall were reproduced from the older building, and the north-east wall of room (8) is actually part of the old work, its bricks being of the typically Kassite measurement, 0·34 m. sq. But this wall is prolonged beyond the east angle of the room to make a door-jamb, and that jamb is of bricks 0·32 m. ×0·20 m. ×0·10 m. plastered against the old wall-face and starting at 0·70 m. above the Kuri-Galzu floor and therefore corresponding to the Sin-balatsu-iqbi threshold, which is 1·25 m. above that floor. The corresponding jamb on the south-east side of the doorway was purely late, its foundations 0·80 m. above the old pavement level; there was no similar wall below it, but only the long table-of-offerings, and the new wall did not rest directly on that, but on intervening dirt. The pavement of the threshold and in the recess north-east of the existing wall was 1·00 m. above the pavement outside the outer wall, so that in the outer doorway of the pylon entrance there must have been steps leading up into the temple.

To the south-east of the doorway now described the wall bounding the court on the north-east has disappeared and can only be followed by the gaps left by it in the pavement, and the pavement itself is none too well preserved. The outer wall of the whole building is also preserved in part only; the stretch from the north corner to the door-jamb is still standing, together with part of the wall beyond the door, but the south-east end has gone altogether, and the line of it and the altar-base against it were deduced only from pavement remains, not very satisfactory evidence. That Sin-balatsu-iqbi's temple extended to the line given by the north corner of the existing outer wall is certain (if only because of the levels of the pavements here and beyond the corner), but the condition of the brickwork does not enable us to say whether or not here the Nabonidus ground-plan, which is clear, followed that of Sin-balatsu-iqbi, as it generally does elsewhere, or was a modification of it.

Certainly the walls connecting the temple with the Ziggurat are original

building of Nabonidus (see below, p. 65), and they form an intrinsic part of his façade. The entrance to his temple is through a wide pylon tower projecting only a little beyond the main wall line; the pylon is not in the centre of the temple court but at its north corner, but it is central to the total distance between the Ziggurat and the terrace wall; the new wall to the north-west of it balances the south-east section of the outer wall of the temple, and the balance is made more exact by there being a brick base or altar on either side of the pylon, one against the temple wall proper and one against the new wall; both the lengths of walling are decorated with the vertical grooves peculiar to temples,[1] and it is probable, though it is not certain, that the doorway in the new wall leading to the passage along the south-east side of the Ziggurat had its pair in a door giving access to the long room south-east of the pylon. The front wall of the court was of mud brick. The court itself, entered at its north corner, was wide and shallow; probably there was a chamber along its south-east side, but of it no real evidence survived, nor could it be seen whether there was a door from the long north-east chamber next to the pylon, but that there should have been such is not likely, the pylon entrance being sufficient communication with the outside. Immediately on the left of the entrance as one came in was the well. The well-head is of Nabonidus bricks and consists of two parallel screen walls with an opening between them at either end; the walls, standing to a height of 0·80 m., rest on the Sin-balatsu-iqbi pavement; in the south-east wall, at the south-west end of it, there was in the masonry a brick box 0·85 m. × 0·40 m. × 0·30 m. deep, probably a foundation-deposit box, but found by us open and empty. The inscribed bricks of Sin-balatsu-iqbi referred to above were found in the lower masonry of the well.

The question is whether Sin-balatsu-iqbi's temple had the same façade or whether its pylon entrance was in the centre of the actual building, which would seem *a priori* more likely. It is quite certain that there was a door in the north-west end of the north-east wall of the courtyard, but it is possible that this led only into the intramural chamber and that there was no corresponding door in the outer wall. In the condition of the outer wall it was impossible to say that the gateway in it was necessarily original and was not a modification by Nabonidus; and south-east of the well such remains as there were were mostly of Nabonidus, and there was no definite proof that they faithfully followed the old lines. On the evidence it would be safer to conclude that the ground-plan of the Sin-balatsu-iqbi and Nabonidus courtyards was the same; but it must be admitted that the position of the main gate in the Nabonidus plan does seem to have been dictated by the existence of the walls continuing the line of the temple façade north-west to the Ziggurat, and that since those walls are not part of the original plan Sin-balatsu-iqbi may well have made his pylon-gate central to the temple proper.

[1] How strictly this rule was observed is illustrated by the south-east wall. On the outside this is decorated with grooves from the south angle of the temple proper up to the point where it is broken away; but the continuation of the same wall to the south-west is not so decorated because the building which it contains is an annexe to the temple and not, strictly speaking, part of the temple itself.

Room (*1*). There were folding doors; against either jamb was a hinge-box with re-used socket-stones of Ur-Nammu and of Gimil-Sin, the latter with the Gig-par-ku text (*Ur Texts*, vol. i, No. 72). Most of the Nabonidus pavement was preserved (bricks 0·375 m.×0·35 m.); the lower pavement had been thickly coated with bitumen, bricks 0·26 m. sq. The Nabonidus bricks also bore the E-gig-par text (*Ur Texts*, vol. i, No. 186), and in view of the discovery of a door-socket with a longer version of the same text (*Ur Texts*, vol. i, No. 187) apparently *in situ* in a chamber on the south-west side of the Ziggurat, we may conclude that the name was applied to a large area containing several distinct buildings of which this Nin-gal temple was one.[1]

Room (*2*) had also double doors opening on the court; of the two hinge-stones found in position that against the south-east jamb was of Ur-Nammu, re-used, the other uninscribed. The lower pavement was thickly coated with bitumen. Underneath this pavement, near the south corner of the room, was found a black steatite foundation-tablet of Gudea recording his building of a temple to Nindar (*Ur Texts*, vol. i, No. 28). There is no reason to suppose that Gudea's temple occupied the site of the Nin-gal building, but the fact that he dedicated temples at Ur, confirmed by our finding loose in the rubbish above the ruins a clay cone of his recording the building of a temple of Tammuz,[2] is of considerable historical importance, see *Ur Excavations*, vol. iv. Below the Sin-balatsu-iqbi floor were found some beads, apparently a votive deposit, U. 3262.

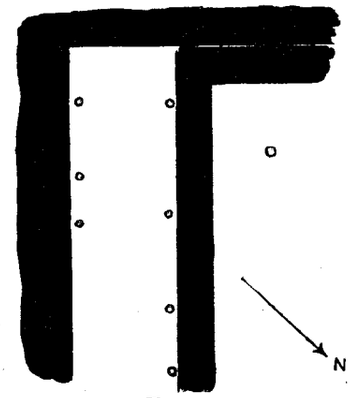

FIG. 4.

Room (*3*), though lying within the enceinte wall of the temple, was entered from the outer court apparently by way of a narrow chamber against its south-east side of which the outlines could not be traced with certainty. Its floor was of bitumen laid over mud. Under the floor there was found loose in the soil a limestone foundation-tablet of Kuri-Galzu and close to this two copper tablets and one of black steatite; one copper tablet was a duplicate of that in limestone and recorded the restoration of an ancient temple of NIN-EZEN LA named Ga-bur (*Ur Texts*, vol. i, No. 164), the other two also formed a pair (*Ur Texts*, vol. i, No. 129) and recorded the building by Warad-Sin of 'a great wall which like a tall mountain cannot be undermined', either the wall of Ur or, perhaps, the bastion and other defences added by that king to the north-west face of the Ziggurat terrace; neither of the two texts can have any reference to the site in which they were found; they must have been unearthed in the Neo-Babylonian period and given pious reburial under the new temple that was in course of construction. Close to the tablets was found the lower part of a small limestone statue in the round, representing a standing figure clad in a skirt reaching to the feet. Under the Nabonidus floor was found a brick gaming-board, U. 3316.

Room (*4*) had no door-sockets; the two pavements were both preserved, the upper of bricks 0·32 m. sq., the lower of bricks 0·30 m. sq., not the usual Sin-balatsu-iqbi measurement, but probably of his date. On the south-east the room was extended by an annexe cut into the enceinte wall and with its pavement some 0·25 m. lower than that of the room proper. In the Nabonidus period there seems to have been a screen of burnt brick running out from the south corner of the original room and partly shutting off the annexe; of this two courses survived and could be traced part of the way across; there was no Nabonidus paving in the annexe, but only that of Sin-balatsu-iqbi, bricks 0·26 m. sq., lying a very little lower than his pavement in the main room; in the later period either the old pavement was retained or it was covered by a mud floor.

Room (*5*), *the sanctuary*. In the door-passage were five steps of bricks 0·26 m. sq. leading to the raised floor of the sanctuary; this was of Sin-balatsu-iqbi bricks 0·26 m. sq. set in bitumen and thickly coated with the same material. On this stood a *naos* built of burnt bricks 0·31–0·33 m. sq. bearing the stamp of Nabonidus and set in bitumen mortar; its three walls were neatly plastered on both faces with fine white cement, the *jûs* of the modern Arab builder. The pavement inside the *naos* had been pulled up by treasure-seekers, and amongst the loose bricks we found two fragments of gold leaf and a large gold ball bead, U. 3125. On the south-east side of the *naos* the pavement between it and the sanctuary wall had sunk; digging here we found one row of dedication-cones against the face of the south-east wall and a second row under the wall of the *naos*, see plan, Fig. 4. Before the pavement bricks were laid small holes had been scooped out in the earth-packing and a little

[1] The point is discussed by Gadd in *Ur Texts*, vol. i, No. 67. See below, p. 119.

[2] *Ur Texts*, vol. i, No. 27; the find-spot is wrongly given in that volume.

bitumen had been poured into each, and on this the cone was set point upwards (see Pl. 27 *b*), and the hole was filled with earth up to floor-level. Thirteen of the cones were found by us *in situ*; the text (*Ur Texts*, vol. i, No. 171) gives Sin-balatsu-iqbi's dedication of the temple Gi(g)-par to Nin-gal and further records that he had had made a statue after the fashion of Nin-gal and had brought it into the temple and that the goddess had made her abode 'in E-nun, a dwelling built for her lordliness'; the cones being found only under the sanctuary, this must be the place of the statue, and perhaps it was the sanctuary, as distinguished from the temple as a whole, that enjoyed the special name 'E-nun'. It is curious to notice the extent to which the traditional use of the foundation-cone had lost its meaning; originally they were nails driven into the face of the wall, whether visible or concealed by plaster; when they occur as foundation-deposits under the walls they are put point downwards, as nails should be, and may be combined with the figure of the man who is supposed to drive home the nail; here the nail form survives but has no more significance, and the point is turned uselessly upwards.

At the depth of about 1 m. below the south-east wall of the sanctuary there was found a fragment of sculpture, the head of a priest finely carved in diorite, U. 3253. This again has nothing to do with the Neo-Babylonian temple, or indeed with the Kassite building below; the high-placed ears, the firmly marked eyelids, and the full eyes are in the Gudea tradition, and though the rest of the modelling would seem to betray a rather later development of art, the piece is not likely to be later in date than the Third Dynasty of Ur. By it lay a very roughly fashioned bottle of greenish clay, hand-made, ht. 0·23 m., and fragments of several small tumbler-shaped vases, also very roughly made.

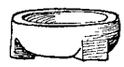

FIG. 5.

Room (*6*) had its Nabonidus pavement well preserved, thickly coated with bitumen; below it was the Sin-balatsu-iqbi pavement. The north-west wall, the outer wall of the temple, stood to 0·75 m., the others were ruined down to pavement-level; the surviving wall showed signs of heavy burning. In the north-east wall were two doorways; that leading into the court had had folding doors and both hinge-socket stones were found *in situ*; both were re-used, one being of Ur-Nammu and the other of Bur-Sin (U. 3037, *Ur Texts*, vol. i, No. 67); the hinge-stone of the other north-east door was of white limestone, uninscribed; on the other side of the same door there was against the jamb but below (late) pavement level—it had perhaps been used as an impost—part of a diorite stela with an inscription (*Ur Texts*, vol. i, No. 30) in which Ur-(Nammu), governor of Ur, dedicates a temple to Nin-gal 'for the life of Utu-ḫegal, king of Erech'. The reference is probably to the Third Dynasty building which occupied the same site as the Neo-Babylonian temple of Nin-gal; the mention of Utu-ḫegal is very illuminating for the history of the Third Dynasty (see *Ur Excavations*, vol. iv, and Gadd, *History and Monuments of Ur*, p. 108). On the upper pavement there lay amidst wood ash a bull's leg made of thin sheet copper over a wooden core; it may have been from a statue or it may have been the leg of a piece of furniture.

Room (*7*) retained both its pavements; under the lower there was found, obviously *in situ*, a copper figure of a dog (U. 3372), a common form of foundation-deposit in Neo-Babylonian times.

Room (*8*) had a pavement of Nabonidus bricks once overlaid with bitumen; the bricks had sunk, making the level very uneven. The mud-brick walls, standing to a height of 0·70 m., were all heavily burned and the room was filled with quantities of charred wood apparently from its roof. In front of the door to room (6) there was a rectangular depression in the floor, 0·20 m. deep, with Nabonidus bricks at the bottom and a row of half-bricks set on edge along the south-west side; it might have been a socket for a stela or altar; to the north-west of it the pavement is raised slightly. At 0·35 m. below the Nabonidus pavement is the pavement of Sin-balatsu-iqbi.

Room (*9*). In the doorway is a raised threshold 0·10 m. high, with a gap in the middle of it; all the pavement of the courtyard in the neighbourhood slopes towards this door. In the pavement (of Nabonidus bricks overlaid with bitumen) there is a bitumen-lined drain which, starting at floor-level just inside the doorway, deepens to 0·50 m. against the north-west wall (Pl. 25 *a*); a covered drain of burnt bricks and bitumen continues its line through the mud-brick wall, the burnt brick-work standing 1·10 m. high. The sides of the drain in the room are raised 0·05 m. above the level of the pavement. It looks as if the drain were intended to carry off water that might be spilt by people using the well in the courtyard. In the room was a basalt mortar, Fig. 5.

Outside the temple the space between it and the south-east side of the Ziggurat was in Sin-balatsu-iqbi's time open and covered with a pavement of 0·26 m. sq. bricks which lay flush with the older pavement of the Kuri-Galzu and therefore on the level of the Third Dynasty terrace; while, there-

fore, the interior of the temple had been artificially raised, it surroundings remained as before. The change was made by Nabonidus. From the face of the buttress at the east corner of the Ziggurat he built a mud-brick wall (bricks 0·33–0·34 m. sq.), its north-east face decorated with vertical grooves, to the enceinte wall of the temple, on which it abuts with a straight joint; in so doing he cut through the Sin-balatsu-iqbi pavement and laid his foundations on the stumps of the shrine walls of the First Dynasty terrace. Parallel with this he built a second wall 4·00 m. to the south-west, this time with its foundations resting on the pavement of Sin-balatsu-iqbi; doors in both walls afforded access from the area on the north-east of the Ziggurat to the passage along its south-east and south-west sides. Through the doorway in the north-east wall ran a brick drain of Nabonidus (Pls. 19 *b*, 48) which could be traced beyond the terrace limits to where it connected with the Nebuchadnezzar drain skirting the north-west side of E-nun-maḫ; it stood three courses above the old pavement and, since it had necessarily run underground, shows that the threshold of this door, now missing, was very much above the old ground-level. Just to the north-west are the remodelled stairs of the Ziggurat, also of Nabonidus' time, and the lowest tread is 1·30 m. above Sin-balatsu-iqbi's pavement; it was, therefore, Nabonidus who for the first time raised the general level of the Ziggurat terrace, and he raised it by 1·15 m.

The space between the two walls was divided into two rooms by a cross-wall in which was a door; the wall was almost entirely ruined, but the position of the door was fixed by our finding the hinge-socket *in situ* 0·75 m. from the east corner; it was a fragment of a huge diorite duck-weight. In the south-east room the south corner was taken up by the mud-brick foundations of a base or altar; it was roughly built, as is natural with underground foundations, rested on the old brick pavement, and had its top surviving course overlapping as if the superstructure had been somewhat larger than the base. In the middle of the room were six burnt bricks piled in threes side by side, their tops just flush with two bricks lying 0·85 m. above the Sin-balatsu-iqbi pavement which may be remains of the pavement of Nabonidus; they must also be foundations for something; farther to the north-east a mud-brick foundation three courses high below pavement-level indicated a third base or altar.

Behind the Nin-gal temple, between its back wall and the south-west wall of the terrace, the Neo-Babylonians retained with certain modifications the system of chambers designed by Kuri-Galzu; their work, whether of repair or of addition, was of a most shoddy character. In the triple gateway the recesses on either side had been blocked by screen walls of mixed mud brick and burnt brick with narrow doors in them, so that there was now an entrance passage flanked by small rooms; this led into the main court (6) off which opened three doors to as many chambers. The screen walls are shallow and do not go down to Kassite floor-level. The two rooms to the south-west, (2) and (4), have each two brick pavements, the lower of mixed bricks, and 0·15 m. above it one which in room (4) is of Nebuchadnezzar bricks

(? re-used) and in room (2) of bricks 0·29 m. sq., unstamped; the lower pavements are rather higher than that of the main court (6), whereas those of the two north-east rooms are flush with it. The dividing wall between rooms (2) and (4) is rebuilt with the same mixture of burnt and mud bricks as the screen walls. All the walls show signs of heavy burning and the rooms were filled with ashes and charcoal. In room (2) the screen wall actually rested on the second pavement; below it was found part of a third pavement of bricks 0·26 m. sq. (therefore Sin-balatsu-iqbi) which could be traced across the central passage; in the Assyrian period, therefore, the ground-plan of Kuri-Galzu was retained, and the whole remodelling is due to Nabonidus (or Nebuchadnezzar?). In the courtyard (room (6)) the upper pavement was of bricks 0·335 m. sq., some bearing the Nebuchadnezzar stamp; 0·40 m. lower was the second pavement of bricks 0·29 m. sq. which ran level with the top of burnt-brick construction in the south-east and south-west walls; that burnt brickwork was apparently the old Kassite, and above it came the shoddy walls of mixed material characteristic of the later building. The north-east wall was the outer wall of the Nin-gal temple and was decorated with the usual vertical grooves; against its foot had been set a sloped 'apron' of mud bricks laid on end, such as we find round the great Nannar courtyard, and the mud floor-level associated with this was probably that of Sin-balatsu-iqbi; the lower pavement of burnt brick stopped short of the wall-face by just the interval of such an 'apron', but of the mud bricks forming it no trace was found. The temple wall had been destroyed down to a line 0·30 m. above the lower pavement and rebuilt, presumably by Nabonidus or his predecessor; two courses of mud bricks had been laid in a straight line along the top of the old brickwork, and on this foundation the new wall constructed with vertical grooves like those of the old, but set more closely together (see Fig. 6). The upper pavement belonged to the later wall. Between the upper and lower pavements were found some fragments of gold foil, a small gold nail, and a gold locket set with semi-precious stones, U. 3338. Down the centre of the room there were two, and probably three, small raised brick bases 0·60 m. sq.

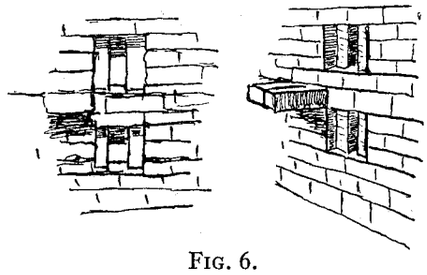

FIG. 6.

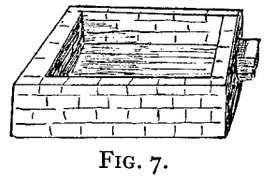

FIG. 7.

In room (7) the upper pavement had disappeared and of the lower very little was left, mostly near the door; corresponding to its level were the remains of a brick box or trough originally three courses deep with paved base, internal measurements 0·80 m. × 0·60 m., having a spout or opening on the north-east side, Fig. 7.

Room (8) had its pavements 0·30 m. apart, preserved along the south-east wall only; the upper pavement of bricks 0·35 m. sq., the lower 0·26 m. sq., the upper coated with bitumen. The lower courses of the walls were of burnt bricks, 0·26–0·28 m. × 0·14 m. below, above them a mixture of re-used bricks of the same type with others 0·33 m. sq. and a few 0·30–0·31 m. sq.; the former is Larsa and the latter Kassite building. In the south-east wall, near the south corner, was a recess

subsequently filled in with Kassite bricks. In this corner was found a crescent of pinkish marble, U. 3295 (*Ur Excavations*, vol. vi) meant to be set on a staff; objects of the sort are represented on seals, &c., as standing in front of shrines.

Room (9) was a staircase. Over the greater part of it are the two normal pavements, the upper of bricks 0·35–0·36 m. sq. thickly plastered with bitumen, the lower of bricks 0·26 m. sq. Down the middle of the room a gap in the paving bespeaks a mud-brick wall of very bad quality with a jamb at its south-west end; against the north-west face of this the pavement runs flush for a while and then rises by a single tread, after which everything is broken away; the flight was presumably solid up to the end of the room and then returned in timber over the south-east passage; it need not follow that the building was of two stories, since from a military point of view access to the top of the terrace wall was obviously necessary. By the doorway was a raised base consisting of two courses of burnt bricks set in bitumen; a small base of mixed burnt and mud brick against the south-east wall lay over the pavement and was clearly of late date.

Of three small rooms in the west corner of the building, lying along the terrace wall, there was nothing to be said. No pavements were found, nor any objects; of the smallest, (12), which was only 1·90 m. sq., it is even possible that it is not a chamber at all but a vertical drain in the wall's thickness, though as the outer face of the wall was not cleared and therefore no exit was found there is no evidence on this point. The area in front of the triple gateway had a clay floor only, but in its south corner there was a rectangle of paving (bricks 0·31 m. sq.) raised 0·50 m. above the mud floor; it is possible that this had been a room enclosed by walls of the desperately bad quality common in this building, but if so the walls had been ruined down to ground-level and could not be distinguished from the mud floor.

Other small objects found in these back rooms were two moulds for making scaraboid beads (Persian period), U. 3246, 3340; a rock-crystal ring, U. 3346; part of a copper dagger-blade; a small limestone mace-head, U. 3349; a second copper figurine of a dog (cf. U. 3372, p. 64 *supra*), a gold ear-ring, U. 8843; a miniature copper pendant in the form of a bird, U. 6930; a copper chisel, U. 3026; a miniature stone celt, U. 3108, a small roughly-fashioned bowl of bitumen, and a brick on which is scratched a gaming-board or abacus, U. 2812.

The 'Boat Shrine' (Pl. 75).

On the north-east side of the Ziggurat there were two buildings occupying the angles between the side flights of stairs and the corner buttress-towers; that to the south-east was called by us the Boat Shrine.

The building, which was in mud brick, was very ruinous; all the north-east half of it had been destroyed by the torrent-bed which cut diagonally across the east corner of the Ziggurat terrace and was responsible for the destruction of the east end of the Nin-gal temple also; all connexion with the courtyard, if there had been any, was therefore lost, and the entrance of the building had vanished. There remained one complete room which appeared to be the sanctuary and the south-west end of the room to the north-east off which the sanctuary opened; further, there was a stretch of mud-brick wall with buttresses on its south-east face connecting the building with the balustrade wall of the south-east flight of stairs. Of this wall very little survived, and by itself it was meaningless; it is therefore tempting to assume that there was a corresponding wall built against the south-east face of the corner buttress-tower of the staircase to the west angle of the building so as to enclose the space between the existing back wall of the building and the Ziggurat. As it is, there is no certain connexion between the west corner of the building and the Ziggurat; and against the assumption that there was, we have the fact that the existing back wall has on its outer (south-west) face the shallow buttresses which usually denote an exterior wall; but it is difficult to suppose that behind the shrine there was an empty space into which there

was practically no means of entry, only an awkward gap between two angles of masonry; and I would add that considering the character of the mud brickwork of the building it is more than possible that our (then untrained) workmen, following the face of the Ziggurat wall, may have unwittingly cut through and destroyed the mud-brick wall behind the shrine.

In view of the character of the corresponding building on the north-west side of the central stairway, I am inclined to believe that while the existing buttressed wall is the back wall of the 'Boat Shrine' proper, there were behind it chambers or magazines (cf. those behind the Nin-gal temple close by) running back to the face of the Ziggurat and enclosed by mud-brick walls built against the Ziggurat's side, just as in the corresponding 'Nannar Shrine' there were mud-brick walls masking the burnt brick of the Ziggurat; externally, therefore, the two buildings would have been very much alike.

What remains of the building is simple. A large room or court, of which only the south-west end is left, extends across the greater part of the whole width of the building; it is brick-paved, and has one door in its south-west wall and one in the north-west wall near the west corner; on this side the wall is 1·20 m. thick and there is then a passage 1·20 m. wide and an outer (buttressed) wall 1·50 m. thick; the doorway has a raised sill of burnt brick and in the passage, round the corner from the door, there are a few burnt bricks stepped up to 0·40 m. above the pavement-level; there is no doubt that this was a staircase built in what was really the thickness of the wall. The interior walls of the building had disappeared owing to the extraordinarily bad quality of the bricks, and could be traced only by the gaps in the pavements; the back wall of the building stood to a height of 0·30 m. inside and 0·50 m. outside, the interior pavement being raised 0·20 m. above terrace-level. The inner chamber or sanctuary was paved, but nearly the whole of its area was taken up by a base of burnt brick standing five courses high and narrowed at the north-west end, and here mud brick takes the place of burnt brick; against the walls were three small bases of about the same height. The room was filled with burnt wood ash, to a depth of 0·50 m. at the north-west end and 0·30 m. at the south-east. The paving-bricks were 0·32 m. sq. with occasional half-bricks 0·32 m. ×0·16 m., and a few bore the stamp of Nebuchadnezzar; in the long base in the sanctuary there were stamped bricks of Nabonidus, as also in the drain just outside the building on the south-east.

The suggestion that this is a 'Boat Shrine' is due to Dr. Legrain. It is true that the long, narrow base occupying the whole of the sanctuary is not at all suitable for a statue, but would serve excellently as a support for a model of the crescent-shaped barque in which Nannar crossed the sky, and Neo-Babylonian texts mention such a barque as having been dedicated at Ur. The mass of burnt wood that filled the sanctuary might be taken to support the suggestion.

The stamped bricks in the pavement may have been re-used, but are probably original and prove that the building was erected by Nebuchadnezzar and was re-used by Nabonidus, who added the long base in the sanc-

tuary; the level at which the building stands is more in keeping with the Nebuchadnezzar period, as it is well below the lowest tread of the Nabonidus stairs. It would appear that in the Nabonidus period the terrace was raised, so that the shrine was partly sunk in the terrace floor instead of being 0·20 m. above it as it was when first built.

Nannar Shrine (Pl. 75).

On the north-east side of the Ziggurat, as stated, there were two buildings symmetrically arranged, one in each of the angles between the side staircases of the Ziggurat and its stair-buttresses; one of them was the 'Boat Shrine', the other the 'Sanctuary of Nannar'. The appropriateness of the latter name can be discussed later; the description of the ruins must come first.

With the collapse of the retaining-wall which held up the Ziggurat terrace on the north-east, the north-east edge of the terrace itself had been weathered away into a slope which was particularly marked to the north-west of the central flight of Ziggurat stairs; with the retaining-wall, therefore, there had gone all the north-east part of the building behind it. Four rooms were in whole or in part preserved. Of the first room (2), to the north of the block, there remained one jamb (the south-east jamb) of the doorway in the north-east wall; this was very important, because it alined exactly with the south-east jamb of the doorway leading from the great courtyard up to the Ziggurat terrace and so, in the absence of any direct connexion, proved the relation between that courtyard and the building in question; it was obvious that that extremely important door on the lower level led to this chamber in the terrace building. The walls of the room, as of the whole building, were of mud brick, and the mud brick was of extremely bad quality, in fact, extremely difficult to detect. From the doorway in the south-east wall to that in the north-east wall the mud brickwork had been weathered down to pavement-level; from that doorway to the north corner of the room the pavement was lacking and all traces of the wall had gone. The pavement was of burnt brick overlaid with bitumen. In the north-west wall there would seem to have been a door close to the north corner, but this is by no means certain; the straight face may have been due to an accident of destruction and the apparent reveal on the outside need be no more than the corner of the exterior buttress.

A door in the south-east wall leads into room (3); the mud-brick walls stood from 0·50 m. to 0·90 m. high except from the doorway to the east corner, where they were destroyed to floor-level. The pavement was of burnt bricks covered with bitumen. On either side of the doorway there were in the pavement square holes wherein were found remains of the palm-wood door-frame.

Rooms (2) and (4) (Pl. 28 *b*) could almost be called the same room, so wide was the opening between them; in fact, the dividing wall was reduced to two shallow buttresses of which that to the north-west was of burnt brick plastered with mud and was built *over* the burnt-brick pavement; it therefore represented a change of plan in the building. Half-way between the ends of the buttresses there was in the pavement a rectangular hole 0·70 m. ×0·35 m.

which contained charred palm-wood; there was, therefore, a pillar here which may or may not have had doors on either side of it. (4) was paved throughout with burnt bricks set in and covered with bitumen; on the pavement lay a palm log 2·70 m. long (it may have been longer originally) and a stone basin, rectangular, 0·52 m. ×0·33 m. ×0·15 m. The mud-brick walls were standing up to 0·40 m. in height, but that on the north-west was ruined below floor-level. Towards the north corner, against the outer end of the jamb or buttress, was a base made of seven courses of burnt brick resting on the room's pavement, and this was prolonged up to the actual corner of the room by a bench of burnt bricks one course high. In the doorway leading to (5) there was a raised threshold one course high. Room (5) had all its walls of mud brick, mud-plastered. The floor was of burnt bricks covered with bitumen, and across the middle of the room was a strip of higher pavement continuing the level of the raised threshold from room (4). Two bricks with the Nabonidus stamp were found here. On the south-east this raised strip of pavement shows a straight edge, on the north-west there were projections which might possibly imply some kind of a screen with an entrance through (or round) it at the north-east end, where the high pavement continued towards the north-west. In the north corner of the chamber was a large rectangular base of burnt brick, built over the pavement, mud-plastered. In the north-east wall there had originally been a small door leading to room (3), but it had been blocked by a screen of mud brick leaving a deep recess in the wall-face.

In the south corner of the room there was found part of a diorite pyramidal monument, U. 1625, bearing a long inscription of Neo-Babylonian date (unfortunately very fragmentary) concerning contracts for the building of a shrine, a *bit apti*, and the acquisition of a site for the same in the city of Ur; it had been kept in this room, apparently, but cannot refer to this building. Also from this building came a fragment of a very fine diorite statue, the lower part of a life size male face carved in the round, U. 1658, see *Ur Excavations*, vol. iv, Pl. 95; this must belong to an earlier version of the temple. From below the floor-level at the north-east end, where the pavement was broken away, came a small diorite head of late date, U. 16423.

There can be little doubt that this is the sanctuary of Nannar, occupying the same position in regard to the Ziggurat that the Warka 'Tieftempeln' do; indeed, it raises the question whether the 'Boat Shrine' was not connected with Nin-gal, so that the symmetry of the two sides of the Ziggurat complex might be complete. The relation with the great courtyard is manifest, and obviously we have to prolong the side walls of the existing building so as to link it up with the courtyard, though there may have been side doors to the Ziggurat terrace also.

Ziggurat Terrace, North-west Side.

So complete had been the destruction of the Neo-Babylonian buildings on the terrace north-west of the Ziggurat that when we cleared the site in 1924–5 I described this part as having been left empty with an open space

extending from the foot of the Ziggurat to the Temenos wall. There is, however, evidence to show that as in the old days so now a wall ran from the foot of the north-west staircase to the south angle of the Warad-Sin fort, with a gateway through it at its south-east end, and in the interval between the first or corner and second buttress of the north-west face of the Ziggurat itself there survived a small fragment of a Neo-Babylonian mud-brick wall running out from the Ziggurat parallel to the other; and in this, too, there was a corresponding gateway of which the hinge-box of stamped Nabonidus bricks survived. This double wall and double gate would exactly correspond to what we have on the south-east side of the Ziggurat, namely, the walls built by Nabonidus to link the Ziggurat up with the Nin-gal temple; there the outer wall was a prolongation of the front wall of the Nin-gal temple, and on the north-west side the outer wall was presumably the front or outer wall of a building which reproduced the 'kitchen' that had occupied the site since predynastic times and had last been restored by Marduk-nadin-aḫe in the eleventh century B.C. But this little fragment of mud brick is all that we possess for the restoration of this part of the terrace.

Ziggurat Terrace, South-west Side (Pl. 74 *b*).

Against the inner face of the new Temenos wall was a range of chambers which occupied most of the space between that wall and the Ziggurat; the narrow passage which remained was closed, certainly at the south-east end and apparently at the north-west end also, by double cross-walls enclosing chambers through which the passage was continued by means of doors in the cross-walls. The range of chambers was interrupted in the middle so as to allow of an entrance passage from the gateway in the Temenos wall. This entrance was paved with bricks 0·32 m. sq. bearing the stamp of Nabonidus; it had been defined on the north-west and south-east by walls which had disappeared, on the north-west entirely, on the south-east except for the north corner, but this was preserved and the clean face of the brickwork on the north-west showed that the entrance had been quite open at its north-east end and that a similar clean-ended wall had to be restored on its north-west side (see plan, Pl. 75). The room on the south-east (No. 5) was paved with bricks 0·30 m. and 0·37 m. sq. and 0·50 m. higher than the pavement on the north-west; its east corner was taken up by a solid mass of brickwork, probably a base for something, and from it to the south corner extended a raised area contained by a low wall of bricks and paved with bricks covered with hard white lime plaster; the pavement sloped to the intake of a large terra-cotta vertical drain (this may have a separate room). At the south-west end of the chamber there was an area flush with the pavement, outlined by a coping of half-bricks set on edge and covered with the same hard white plaster sloped down to a drain intake; the whole chamber would seem to have been used for lustration purposes. To the south-east of this could be distinguished the outlines of two more chambers and the north-east wall of the range ran on for a short distance farther, its foundations being quite shallow, but no features of interest were preserved.

To the north-west of the entry there was a mud-brick wall, ruined down to floor-level, which was the south-east wall of a chamber (2) roughly paved with unstamped bricks 0·24 m. sq., giving a level *c.* 0·30 m. above that of the entry pavement and therefore corresponding more or less to that on the south-east side. To the north-west of this room and apparently divided from it by a mud-brick wall came a room (3) containing four long, narrow compartments 0·15 m. deep divided by double rows of (broken) bricks set on edge and the space between them filled in solidly with earth; the floors of the compartments were proofed with bitumen asphalt which was carried up in a curve against the sides to a height of 0·05 m., and are regularly sloped down to the north corner. The partitions between the compartments had never been carried up as walls and apparently had never been higher than they are to-day. In the next chamber to the north-west there are three similar compartments (there may well have been one more, but there were remains of three only), and beyond these very scanty remains of two others lying at right angles to the rest, i.e. north-west by south-east; these had been destroyed and buried beneath a rough, circular hearth of later date; traces of the north-west wall of the room were found and beyond it a little paving of bricks 0·26–0·27 m. sq. which probably date to the time of Sin-balatsu-iqbi, mixed with some of 0·31 m. sq. of definitely Neo-Babylonian type. As regards the date of the compartments, they would seem to be of Nabonidus. The floors in all the chambers are higher than that of the entry, which alone is dated by stamped bricks, and the divisions between the compartments are very rough for Nabonidus' work, although the floors of the compartments are quite good; their level agrees fairly well with that of Nabonidus, and as the bitumen paint applied to the face of the Ziggurat, which certainly dates from Nabonidus, does not come so low as the pavement of the entry, but seems to indicate a higher floor-level in the Ziggurat passage which would be almost exactly that of the chambers, the argument based on levels would be for rather than against Nabonidus (see Pl. 51 *a*).

It seems to me probable that the compartments were oil magazines; they are wide enough to take a double row of large store-jars, the sloped, asphalted floors are suitable for the storage of a liquid which, soaking through the porous clay of the jars, would run down into the deepest corner where it could easily be scooped up instead of being wasted, and the partitions seem to me to be gangways giving ready access to the jars; the arrangement is almost exactly that of a modern petrol-store, and the parallel with the famous magazines of Knossos is striking.

Whatever buildings may have stood between the magazines facing the west angle of the Ziggurat and the fort in the corner of the Temenos wall, there remains of them nothing whatsoever.

The passage between the range just described and the south-west face of the Ziggurat showed no brick paving of Nabonidus or of any Neo-Babylonian builder; the old pavement of Kuri-Galzu was found covered by simple earth which seems to have supported a clay floor. Resting on the pavement but evidently belonging to a much later date are 'boxes' roughly

made of burnt bricks set on edge in which were found traces of wood ash; they are probably supports for steadying upright poles which rose from the level of the clay floor (Pls. 28 *a* and 52 *a*); possibly these were flag-poles like those against Egyptian temples.

The restoration of a double gateway towards the north-west end of the passage is justified chiefly by considerations of symmetry, but it is made more probable by the fact that the inner cross-wall would come precisely where there is a salient in the very ruinous north-east wall of the range (this may indicate the narrowing of the passage as shown in the restoration in the plan). The gateway at the south-east end of the passage is certain. Here there are two cross-walls of mud brick upon three courses of burnt-brick foundation enclosing a small chamber whose floor (apparently of clay) lay high, there being brick steps in the north-west doorway, while in the south-east doorway were steps down from a higher level to the south-east. By the north-west door, against the north-east jamb, there was below floor-level in a hinge-box of Neo-Babylonian bricks a diorite door-socket of Bur-Sin (re-used), *Ur Texts*, vol. i, No. 67, mentioning the Gi(g)-par-ku.

The walls forming this gateway are of a very shoddy description, but that they are part of the Nabonidus reconstruction is undoubted. The pavement inside the Temenos gateway and the level down to which the brickwork of the middle part of the Ziggurat has been washed with bitumen prove that the terrace was not raised on the south-west side as it was on the north-east; on the south-east side the evidence of the Nin-gal temple is conclusive, and there has therefore to be some point at which there are steps down from the new high-level terrace to the original level preserved—or very nearly maintained—along the south-west side of the Ziggurat. The double gateway with the flights of brick stairs in both doors, each of them leading down from south-east to north-west, gives the required transition; as is also shown by the bottom line of the bitumen wash on the brickwork being higher in the chamber than to the north-west of it; and it is practically certain that there was a corresponding gateway with steps to effect the same transition towards the north-west end of the Ziggurat passage. The importance of the chamber here lies therefore in its function, not in its character; the three supposed floor-levels found in it may be merely the accidental stratification of its filling; the poor quality of its walls is probably due to the fact that most of the surviving brickwork was originally below floor-level. That all this was an innovation is proved by the fact that underneath the Nabonidus pavement inside the Temenos gate there were remains of walls in mud bricks which were of the size characteristic of Sin-balatsu-iqbi though better in quality than those used in his Nin-gal temple; Sin-balatsu-iqbi therefore followed the old plan with a continuous range of chambers and no exit through them, and only with the building of Nebuchadnezzar's Temenos wall was there any reason to break with tradition.

CHAPTER VII

THE NANNAR COURT IN THE THIRD DYNASTY

INSCRIPTIONS upon bricks and cones show that the Ziggurat terrace was a self-contained entity named E-temen-ni-gur, distinct from the Temenos proper, E-gish-shir-gal, within which it lay. As has already been stated, it occupied the west corner of the larger enclosure, and the south-west wall of the terrace rested on the mud-brick core of the boundary wall of E-gish-shir-gal. On the north-west side there was a space of nearly 30·00 m. between the foot of the terrace wall and the outer face of the wall of the Temenos, and this must certainly have been occupied by buildings—indeed, there exist at the south-west end remains of the substructures of such, heavy cross-walls of mud brick which may imply something in the nature of a corner fort; but what there is is very scanty and in any case has no real connexion with the Ziggurat terrace which alone is our concern here. The buttressed terrace wall runs in a straight line to the corner of the outer wall of the great courtyard lying north-east of the Ziggurat.

The Great Courtyard (Pl. 77).

Against the north-east side of the Ziggurat terrace, from its north angle for about two-thirds of its length, there is a large open court surrounded by a double wall with intramural chambers. It lies lower than the terrace, its pavement-level in the Third Dynasty period being 1·70 m. below that at the foot of the Ziggurat, and therefore it cannot be correctly described as part of that terrace; but the connexion between the two was certainly very close. The evidence on which we have to rely dates from a later period, but it is consistent. The area of the court is proof of its importance, but it is simply a court, and having no special features of its own must be regarded as an appanage of some other building; it has direct access to the Ziggurat terrace and to no other structure; while it is not centred on the Ziggurat the axis of its south-west gateway would seem to be also that of the temple of Nannar lying below the Ziggurat, north-west of the central stairs; when Adad-apal-idinnam restored it in *c.* 1070 B.C. he took the opportunity to vaunt himself as 'the renewer of E-gish-shir-gal',[1] implying that the courtyard and the terrace shared a common name. The courtyard extends right across to the north-east wall of the Temenos, in which there must have been a stepped gateway leading to the pylon entrance of the court; it is the court, therefore, that affords access from outside the Temenos to the Ziggurat (hence the imposing character of its façade) and also, perhaps primarily, to the temple of Nannar; to describe it as the outer court of the Nannar temple would probably be correct.

The ground-plan of the Third Dynasty courtyard is given on Pl. 77.

[1] *Ur Texts*, vol. i, Nos. 166–7.

Very little of it in reality remains, and the plan is a reconstruction made possible by the fact that the later builder who destroyed Ur-Nammu's and Dungi's work did so only to rebuild on a larger scale; had we nothing but the fragments of Third Dynasty walls and pavement to go by, no reconstruction could have been suggested, but as it is the main lines at any rate are beyond question.

The original courtyard measured 65·70 m. by 43·60 m. internally; its dimensions over all were 96·00 m. by 79·00 m., the latter measurement being taken from the back of the terrace wall to the main line of the north-east façade, not including the salient of the gate tower; on the north-west its outer wall ran immediately behind that of the Temenos (which was here recessed) and on the north-east it actually overlapped the core of the Temenos wall. On three sides, the north-west, south-west, and south-east, the double wall of the court enclosed long, narrow chambers communicating with each other, and on each of these sides there was a single doorway in the inner wall giving access to the range of rooms; but whereas on the north-west and south-east these were apparently simple doorways, the south-west door was distinguished by a pylon entrance which not only led to the intramural chambers but, as is shown by the analogy of the later building, had facing it a second doorway in the back wall, through which went a flight of steps affording approach to the Ziggurat terrace. On the north-east side the façade is curiously irregular; for a short distance from the east corner the width of the range is the same as on the other three sides, then comes a salient and right up to the north angle extends a more solid block with narrow chambers set endwise to the courtyard instead of parallel to it, flanking a massive entry with projecting pylon towers, three gateways, and two staircases; the flanking chambers are independent and have each their own doorway opening on the court.

The building was destroyed as a result of the Elamite invasion, but its almost complete disappearance is due to the changes made by later kings. It must be remembered that the court lay lower than the terrace of the Ziggurat but was itself raised above the main town level, so that its outer walls on the north-west and north-east were retaining-walls; where these walls had been damaged by the Elamites the obvious way to repair them was by adding a *kisu* or revetment against the outside, and this is what the Larsa builders did: the addition enlarged the area of the platform and altered its axis, for not much addition could be made on the south-east, owing to the proximity of E-nun-maḫ, another ancient and sacred building, whereas on the north-west considerable expansion was possible. A slight reduction in the width of the double walls further increased the area of the open court; the stumps of the old inner wall were now buried beneath the new court's paving, the old outer walls along the north-west and south-east sides in so far as they survived at all formed a bedding for the floors of the intramural chambers, while on the north-east side the shifting of the entire block outwards towards the north-east required the radical clearing of the site, for the new foundations went down almost as deeply as the old, and it was only in the middle of some rooms that the new builders, in order to save themselves trouble, left

any remains of the brickwork of Ur-Nammu. On the south-west side of the court the destruction of its walls had apparently involved the collapse of the edge of the Ziggurat terrace; instead of rebuilding the wall and filling in behind it, the new architect preferred to enlarge the court at the expense of the terrace, cutting the latter back until he had secured a straight face against which his new retaining-wall could be built; on this side also there is, therefore, a set-back of the boundary line of the courtyard, and the foundations of the Third Dynasty pylon gateway are found below the pavement of the later court.

The explanation here given will be confirmed by a comparison of the plan of the Kassite courtyard on Pl. 78, on which the Third Dynasty remains are shown in single hatching, with the reconstructed Third Dynasty plan on Pl. 77. On the south-west the front line of the inner court wall is preserved from the west corner to the face of the gateway jamb, showing the double salient of the towers. In Sqq. A 1, A 2 there remain five courses of burnt bricks 0·30 m. sq. ×0·055 m. set in bitumen over mud-brick foundations; in Sq. A 3 the projection (foundations only) contains one stamped brick of Bur-Sin, perhaps due to repairs; beyond this to the south-east the wall retains nine courses of brick and is apparently 3·75 m. wide, and at the back of it there are paving-bricks 0·39 m. sq. ×0·07 m. set in bitumen. The south-east side of the gate tower has been destroyed, but from its corner the remaining brickwork gives the face of the second salient and part of the main wall line; the foundations are in mud brick of the normal Ur-Nammu type, but in front of it, just below pavement-level, and extending back over it are burnt bricks, implying that the wall proper was of burnt brick; the back of the wall was destroyed in order to lay the foundations of the Larsa wall behind it. On the north-west there lay below the burnt-brick pavement two stretches of mud-brick wall, of Ur-Nammu bricks measuring 0·23 m. ×0·15 m. ×0·08 m., of which both faces had been ruined away, leaving only the rough core; this was, however, sufficient to give approximately the position of the wall. Between the inner and outer walls of the Larsa building there was more brickwork under floor-level which showed a broken south-east face down the middle of the chambers; it represents the back wall of the Ur-Nammu structure. On the north-east side the true eastern angle was found, two courses high, lying below the pavement 1·00 m. inside the line of the later work; it was not traced farther, but it suffices to give the boundary-line of the court. Inside the rooms lying between the east corner and the gate-tower of the Larsa building there were found five blocks of Third Dynasty mud brickwork, left simply because they did not interfere with the foundations of the later building, which showed some cut and some true faces. The first block from the south-east had a true face on the south-west and the other faces were cut; the second was cut on the south-east, south-west, and north-west sides, and on its north-east side showed a true face in the middle flanked by two patches of cut face; this would seem to have been due to the trimming away of two projecting buttresses, and the block must, therefore, be part of the outer wall-face. The third block has a true face at its south-west end and is cut on the other three sides; the true face alines with that on block 1 and

must give the jamb of a second door. The next two blocks are cut away on all sides and are, therefore, both parts of the core of wall lengths of which the faces have gone; the fact that their south-west ends are almost in alinement with the true ends of blocks 1 and 3 is an accident due to the exigencies of the later building. In the gate-tower itself the corresponding jambs of the central door-passage were found under the floor of the second guard-chamber of the Larsa building, and under the outer guard-chamber there survived a mere slice of mud brickwork which fortunately retained its true north-west face and could thereby be identified as part of the jamb of the outer door. On the south-east side of the court the return from the eastern angle was long enough to give the measurements of a shallow recess and so to establish the fact that the north-west and south-east walls were decorated with plain buttresses. It is noteworthy that in the interior walls of the north-east range the bricks are not of the regular Ur-Nammu type, but either 0·30 m. sq. ×0·055 m. or 0·34 m. ×0·19–0·21 m. ×0·08 m., which are rather characteristic of Dungi; it would appear that here, as in the case of the Ziggurat itself and of the Palace building, the work was begun by Ur-Nammu and finished by his son. Low down in the filling of the easternmost chamber of the Larsa building was a (broken) clay tablet dated to the twenty-fifth year of Dungi; it cannot of course be taken as supplying any date for the older construction.

The whole interior of the court measuring 65·70 m. ×43·60 m. had been paved with brick. None of the pavement bricks had been stamped, but variations in size made it clear that much patching had been done at different times, and of the Third Dynasty pavement not a great deal remained; on the whole there was on the south-west side of the court a general use of bricks measuring 0·39 m. sq., on the north-east of bricks 0·32 m. sq.;[1] both these dimensions are consistent with Third Dynasty date, but the 0·39 m. sq. bricks would seem to have been employed here earlier than those of smaller size. In Sqq. D 1–E 1, E 2 there were found below the late pavement remains of Third Dynasty brickwork, some of which belonged to the wall and some to the pavement of the court; embedded in it were five plain clay cylinders, ht. 0·15 m.–0·18 m. and 0·30 m., diam. 0·10 m., smeared with bitumen on the outside and filled with white lime; three more, precisely similar, were found in Sq. G 13, on the south-east side of the court; they were set upright, in this case not embedded in the brickwork, but in a layer of clay between the upper bricks of the pavement, which measured 0·34 m. sq., and four lower courses of brick 0·39 m. sq. Of the five cylinders on the north-west side two had been removed from their places and were found lying horizontally, but the imprints of them could be seen in the edge of the brick mass, the tops coming only one course of bricks below the pavement surface; the bricks

[1] In the west corner of the court, in front of that section of the columned wall which is of burnt brick, the pavement was of burnt bricks covered with bitumen; it extended along the north-west end of the court and some of the bricks bore the stamp of Adad-apal-idinnam. About 0·25 m. below this lay another bitumen-covered pavement of mixed bricks (including many fragments) which, judging by its relation to the north-west wall, was that of Kuri-Galzu; the Kuri-Galzu bricks rested directly on those of the Larsa and Third Dynasty pavements.

measured 0·34 m. sq. or 0·34 m. ×0·21 m. ×0·08 m.; many bore two finger-prints, a common feature in bricks of Dungi, but not known after his time, and one had the Dungi stamp; these measured 0·34 m. ×0·19–0·20 m. × 0·08 m.; one was a segmental brick 0·39 m. radial length and 0·31 m.–0·41 m. segmental width. The clay cylinders, except for the fact that they are not inscribed, are exactly like those of Dungi found under the pavement of his Dimin-tabba temple (see vol. vi). It is likely that the big 0·39 m. sq. bricks are those of Ur-Nammu and the 0·34 m. bricks those with which Dungi completed his father's building. Parallel to the south-west wall, in Sqq. B 3, 4, 5, there was a curious feature in the pavement, a long series of shallow compartments (A . . . A) which had originally run as far as the north-west wall of the court. It is constructed with bricks 0·39 m. sq. ×0·06 m.; the divisions between the compartments are formed of lines of single bricks; the sunken floors of the compartments are two bricks thick, two bricks wide, and six bricks long, and they slope down towards the centre. The edges of the compartments have disappeared on the north-east and south-west sides, the bricks here being broken. There is nothing to explain the purpose of the construction.

The compartment construction actually runs over, and is therefore later than, a pavement of two courses of bricks 0·295 m. sq. ×0·055 m. covered with bitumen which in Sqq. B 5 and B 6 lies over the top of a large rectangular structure of earlier date. This (B) is a base or pedestal still standing seven courses high, of bricks 0·36–0·37 m. sq. ×0·065 m., laid in bitumen mortar; standing as it does immediately in front of the doorway leading from the court to the Ziggurat terrace it can scarcely be other than an altar with unusually deep foundations. On the north-east side it had been enlarged by a second base (C) abutting on it, built of bricks 0·23 m. ×0·15 m. ×0·08 m.; this has its foundations flush with the fifth course of the older altar and itself stands seven courses high, rising three courses above the top of the burnt-brick pavement, which overlies the old altar but is brought up against the sides of the new work. The new brickwork was also laid all over the top of the old altar, as can be seen on the south-west side where the bottom courses are of the old 0·37 m. sq. bricks, then two courses of bricks 0·255 m. sq. ×0·05 m., and above these the 0·23 m. ×0·15 m. ×0·08 m. bricks. At the south-east end the construction is different, most of the bricks being of the 0·23 m. type, but mixed with them are a few of 0·31–0·32 m. sq. ×0·08 m. Against the north-east side there is a smaller base (D) seven courses high with a box-like projection at its north corner roughly built without bitumen, but the bricks here are consistently 0·25 m. ×0·175 m. ×0·08 m. and have the appearance of being Sin-idinnam's; they are in any case Larsa. Below the altar, on its south-west side and towards the west corner, there were remains *in situ* of an altar or base apparently circular in shape, constructed of burnt plano-convex bricks 0·30 m. ×0·18 m. having in the top surface two finger-marks, either plain holes or long depressions. Immediately to the north-east of the altar, in Sq. D 6, there was another but smaller and square brick base (E) built of bricks 0·23 m. ×0·15 m. ×0·09 m., most of them bearing on

the lower face the stamp of Ur-Nammu, set in bitumen; it stood eight courses high and its top was flush with a patch of pavement on the south-east (or the foundations of an addition to the base) of precisely similar bricks with the Ur-Nammu stamp.

In Sqq. B–C 3–4, against the north-east edge of the compartment-pavement, there was a base (F) built of bricks 0·33 m. sq. ×0·065 m., and half-bricks 0·33 m. ×0·165 m. ×0·065 m., set in bitumen, many of them with brick-stamps of Bur-Sin; this had been cut into and may originally have been in the form of a box, instead of being solid, but the evidence on the point was inconclusive.

In Sq. A 2–3 there ran out from the face of the boundary wall a rectangle of brickwork (G), which was in part overlaid by the compartment structure already mentioned; it was of bricks 0·36 m. sq. or 0·36 m. ×0·18 m. ×0·09 m., a type which I should be inclined to attribute to a period older than Ur-Nammu. In Sqq. B–C 1–2 there was another rectangular base lying diagonally to the court, built of bricks 0·33 m. ×0·21 m. ×0·065 m., of which only three courses were left. In Sqq. D–E 5 there was a fragment of a burnt-brick wall running across the court; it was broken away at both ends and there was no sign of any return, but it was definitely of the Third Dynasty, judging by its bricks, which were 0·29 m. sq. ×0·05 m., set in bitumen; in no place did it stand more than two courses high, but since the top of it was more than two courses below the level of the Ur-Nammu pavement, where that was preserved in its vicinity, it would seem to be part of an (older?) wall which has been deliberately dismantled. No further explanation of it could be suggested.

It would be rash to attempt to unravel all the difficulties caused by the use of bricks of different sizes, but the general results are quite clear. The court had been paved, and the expanse of pavement was broken by several pedestals or altars of brick whose foundations went down below the pavement, and presumably the superstructure of them rose above it. One altar is definitely the work of Ur-Nammu, one is as definitely that of Bur-Sin; the main altar in front of the terrace gateway would seem to be a reconstruction by Ur-Nammu of an older and smaller altar (built of the 0·36–0·37 m. sq. bricks) which might date to Gudea or even to the Sargonid period. The oldest surviving pavement remains, of bricks 0·39 m. sq., I imagine to be of Ur-Nammu; the paving-bricks 0·34 m. sq. I would attribute to Dungi, since these are found resting on the terra-cotta cylinders which are probably his. All these features were confined to the north-west part of the court; from the south-eastern salient of the pylon in the south-west wall there was a change of level and perhaps of character.

From this wall-angle there runs out (Sqq. A–G 8) a cross-wall of burnt bricks 0·39 m. sq. ×0·085 m., probably therefore of Ur-Nammu; it could be traced for half the width of the court, but after that broke away. Its north-west face was plain originally, though at a later date niches had been cut back into its face and cross-walls had been built abutting on it, this in the Larsa period; on the south-east there were no cross-walls and the wall

had itself no distinguishable face, but the pavement was incorporated in it; it would therefore seem to have been a low wall forming a step from the level of the courtyard on the north-west to a higher pavement on the south-east.

The whole of the area behind the cross-wall seems to have been paved with four courses of 0·39 m. sq. bricks set in stiff clay mortar over a prepared bed of puddled clay. Over this had been spread a layer of mud 0·10 m. thick, and over this was laid a single-course pavement of burnt bricks 0·30 m. sq. with which are mixed a few of the old 0·39 m. sq. bricks. Of this upper pavement there is not a great deal left. The lower four-course pavement has been terribly cut about, except near the south-west wall of the court, and only tattered shreds of it were felt, so that it was hard to decide whether these really represented pavement or walls, but, as over the main area there were never more than the four regulation courses and in no case was there a clean wall-face but always a broken edge, we were driven to the conclusion that there had been a uniform pavement and no walls rising from it. Only on the north-west did the wall dividing this from the lower paved area rise, in one place, one and perhaps two courses above the south-east pavement; apparently it had made a balustrade as well as a division; and at the extreme south-east, against the south-east wall of the court, the foundations went deeper and there were nine courses of burnt brick of which the upper four courses were of bricks 0·395 m. sq. ×0·075 m. and 0·34 m. ×0·09 m. with one of 0·30 m. sq. ×0·07 m., set in bitumen, and the lower five courses of burnt bricks 0·395 m. sq. ×0·07 m. and 0·395 m. ×0·20 m. ×0·07 m. set in mud mortar; the top of these was flush with the pavement, but may have been cut down, and probably this brickwork represents the inner wall of the Third Dynasty courtyard with Ur-Nammu's bricks in the foundation and Dungi's above.

But it is always possible that there was something above this pavement in the Third Dynasty period, and the strongest argument for there having been something is (*a*) the analogy with the succeeding Larsa period, and (*b*) the damage done to the pavement, which would seem insensate if it were a pavement and nothing else.

At about 4·00 m. from the south-west wall of the courtyard and 6·00 m. from the south-east wall the two pavements described above had been roughly hacked through and there was a sunken area paved with a rough mosaic of broken bricks which may have been a surface or may have been a foundation (see Pl. 35); above it was merely earth-packing. The brick mosaic was not very level, but its general surface was 0·75 m. below the top of the older (0·39 m. sq. brick) pavement. A hole was dug through this, and at 0·15 m. below it we found a second level of rough brick paving, again a mere mosaic of broken bricks many of which had bitumen on their faces, showing that they had been used in wall construction and were only re-used in the pavement. Below this was earth and then at 0·15 m. again a third pavement of precisely the same type, made of broken and complete bricks, some of the latter 0·39 m. sq. bricks of Third Dynasty types. At 0·40 m. below this came another layer of bricks, but this time they looked less like a pavement than

the stopping of a hole, for though they lay flat in the soil no care had been taken to get them flush; they seemed to have been thrown down on to a not very regular surface. A large proportion of the bricks were segmental; several of these occur also in the surface of the 0·39 m. sq. brick pavement close to the sunken area. In one place in the top floor of the sunken area the segmental bricks lay two courses thick and seemed to have been put to outline an unpaved area from which there led out a band of unpaved flooring like a channel; here, too, some of the bricks looked like a Larsa product; there was also here a patch of rough limestone. Above the bricks was stiff clay rising virtually to the level of the brick pavement; at one point there overlay the clay a layer of earth 0·20 m. thick on which was a single course of mud bricks 0·31 m. sq. ×0·11–0·14 m. thick which seemed to have been put down to level the surface with that of the pavement: but these mud bricks must belong to a very late period.

The Third Dynasty pavement had been cut into in every direction. The brick rubble found at various depths in the filling of the holes so made is composed in part of Larsa bricks, in part of bricks (e.g. the segmental) similar to those in the surviving pavement and very probably coming from the parts of the pavement that had been destroyed. It was in the Larsa age that the damage was repaired, and it must have been repaired not long after it was done, seeing that the debris of the destruction was still on the spot to be utilized for the repairs; presumably the Elamites were responsible for the destruction, and the fact that they dug so deeply into the solid paving and that in the Larsa period the site was occupied by a building wherein was an underground chamber (see below, p. 85) suggests that in the Third Dynasty also there was something beneath the pavement which excited the cupidity of the Elamites.

The following types of burnt bricks occur in the buildings in the Nannar courtyard:

Ur-Nammu	building bricks	0·23 m.×0·15 m.×0·075 m.
	paving bricks	0·39 m. sq.×0·07 m.
Dungi	building bricks	0·34 m.×0·19–0·21 m.×0·08 m. (with finger-prints and stamps)
	paving bricks	0·34 m. sq.×0·07–0·08 m.
Bur-Sin	bricks	0·33 m.×0·165 m.×0·065 m. (stamped)
		0·33 m. sq.×0·065 m. (stamped)
Third Dynasty		0·30 m. sq.×0·055 m.
	also mud bricks	0·30 m. sq.×0·09 m.
Sin-idinnam	building bricks	0·35–0·36 m.×0·18 m.×0·09 m. (stamped)
	paving bricks	0·35 m. sq.×0·09 m.
	paving bricks	0·34 m. sq.×0·08–0·09 m.
Larsa	bricks	0·29 m. sq.×0·05 m.
		0·27 m.×0·18 m.×0·09 m.
		0·25 m.×0·16 m.×0·08 m.
	also mud bricks	0·34 m. sq.×0·09 m.
Kuri-Galzu	paving bricks	0·33–0·34 m.×0·165–0·175 m.×0·08–0·09 m.
	building bricks	(stamped)
	also mud bricks	0·32 m. sq.×0·09 m.
Adad-apal-idinnam	paving bricks	0·325 m. sq.×0·07 m.
Sin-balatsu-iqbi		0·33–0·34 m. sq.×0·11 m.

CHAPTER VIII

THE NANNAR COURT IN THE LARSA PERIOD

The Great Courtyard (Pls. 70, 77).

APART from all the work done on the Ziggurat terrace proper, the great courtyard of Nannar was entirely remodelled during the Larsa period. Its area was increased by the addition of heavy revetments against the north-west and north-east walls, which enabled the whole range of intramural chambers to be moved outwards, while the narrowing of the range itself further added to the dimensions of the inner court. The clearing of a section of the outer face of the north-west wall failed to throw any light upon the Larsa building, for it had been either masked or completely destroyed and replaced by the Kuri-Galzu wall (see p. 88); but another excavation against the outside of the east angle was more instructive. At this point the foundations of the Kassite outer wall were stepped up and rested on remains of the Larsa wall which still stood to a height of about 0·60 m. above what had been then ground-level (Pl. 32 *b*). Below there was a heavy stepped foundation of mud bricks with offsets of 0·10 m. to 0·15 m., its total depth 1·50 m. The wall line so far as traced consisted of a series of reveals corresponding to the recesses and double buttresses of the later Kassite work which replaced it, but it was much more elaborate than that. The short stretch numbered (1) on the ground-plan (Fig. 8) was plain, as was stretch (2), the side of the first element of a buttress; in the angle between them was a mud-brick pavement 1–2 courses thick; the next, (3), was decorated with a triple niche which came down not quite to ground-level, leaving a plain face 0·20 m. high below the base of the niche; the next salient (4–5) also had a plain base giving the main constructional line, but from it rose a column in the three-quarter round having a diameter of 0·75 m. Along the front of the buttress (5) ran a decoration of half-columns divided down the middle by double niches exactly in the style of the façade of Warad-Sin's bastion on the north-west side of the Ziggurat terrace; the whole face was covered with a thin greenish plaster precisely like that on the same bastion. In the mixed rubble which formed a layer in front of the mud-brick wall, slightly below the level of the base of the burnt-brick Kassite wall, there were found broken bricks of Ur-Nammu, a tablet of Bur-Sin, broken bricks of Sin-idinnam and of Enannatum, son of Ishme-Dagan, and fragments of dedication cones of Kudur-Mabug and of Warad-Sin; in the rubbish above this was a stamped brick of Kuri-Galzu. The mud wall-bricks measure 0·34 m. sq. ×0·09 m.

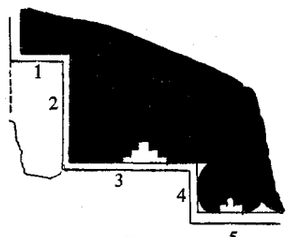

FIG. 8.

The lines of the Kassite and of the decorated mud-brick building are so far identical in the small stretch for which the latter is preserved (see Pl. 32 *b*)

that an identical plan can safely be assumed for the two for the whole length of the building's front. As to its authorship there can be no certainty. The presence of the Warad-Sin cones (whose original position would have been much higher in the wall, see Pl. 29 *a*) is not in itself conclusive in that they are associated here with the records of earlier Larsa rulers; the similarity in style of the decoration to that of the Warad-Sin bastion would at first sight seem to prove his authorship of the courtyard building, but Warad-Sin may have copied the work of an older builder. The inner court was in use all through the Larsa period, as is shown by the presence of the great Sin-idinnam base, &c., but that again is not proof in the other direction, for the Third Dynasty boundary walls may have been repaired by the earlier rulers of Larsa and the enlargement of the court undertaken by Warad-Sin without disturbance to its interior arrangements. While therefore it is likely that Warad-Sin built bastion and courtyard alike, only the former can be attributed to him with certainty.

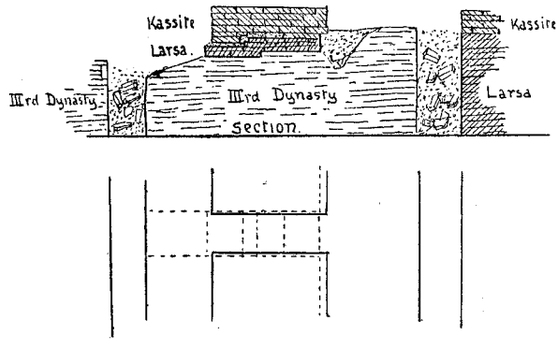

FIG. 9.

Certainly the interior remodelling of the courtyard was carried out much earlier in the Larsa period. In the south-east jamb of the main doorway in the south-west wall, i.e. the doorway leading from the court to the Ziggurat terrace, the evidence is quite clear. Behind the old wall of Ur-Nammu, built of mud bricks 0·23 m. ×0·15 m. ×0·07 m., there had been laid a filling of clean soil whereon the new wall was built. The wall was of mud bricks, but the foundations of the angle of the wall were strengthened by a few courses of burnt bricks, five at the actual corner and behind that three, which were bonded into the mud brickwork of the main fabric (see Fig. 9). Against the face of the foundation lay a few loose bricks, and these, which resembled those in the foundation, bore the stamp of Sin-idinnam. Consequently it was in his time that the court was enlarged internally by pushing back the south-west wall at the expense of the Ziggurat terrace.

Over the north-west half of the court the pavement showed no signs of having been altered or relaid by the Larsa rulers; probably their work in this respect had been destroyed by subsequent builders. But flush with the surface of the Kuri-Galzu pavement, or immediately below it, there were several 'bases' resembling those which had been in use in the Third Dynasty period. The most remarkable of them (J) was in Sqq. D–E 7–8, Pl. 77. It was 4·30 m. square and no less than 7·30 m. high, and towards the base it was strengthened by stepped offsets (Pl. 39, *a*, *b*). On removing the top course of bricks we exposed a course of bricks set in bitumen, half-bricks 0·35 m. × 0·18 m. making an edging within which were whole bricks 0·35 m. sq.; these had extended over the entire area, but later a hole 2·70 m. ×2·40 m. had been cut down into the brickwork to the depth of two courses, and then there had

been laid across the hole three rows of brickwork with irregular gaps between them, the bricks 0·35 m. sq. and 0·33 m. sq., laid in mud mortar with a very slight admixture of bitumen (see Pl. 39 *a*). There was nothing to explain the meaning of the hole and the 'trenches' left in the later brickwork. Below this there was solid brickwork. Amongst the bricks in the top course were some with the plum-red colour which is characteristic of Sin-idinnam; two stamped bricks of that king occurred (*Ur Texts*, vol. i, No. 119), one in the tenth course from the top, so that the whole structure was uniform and of one date. The purpose of this solid mass of brickwork remains unknown. It was opened by us, and contained no deposit or place for such; it was too small to support a building and no monument of the Sumerians would have been of a weight to require so solid a pedestal. The base seems to have been connected with the containing-wall of the higher pavement to the south-east by small cross-walls built of bricks similar to those in the base itself and not bonded into the containing-wall but abutting on it. How high the 'base' originally stood it is of course impossible to guess, but in view of its astonishing foundations it is tempting to see in it a sort of brick obelisk.

In Sq. C 4 was a smaller but similar 'base' (K) consisting of sixteen courses of burnt bricks 0·34 m. sq. ×0·08–0·09 m. thick and either greenish-yellow in colour or with the plum-red flare characteristic of Sin-idinnam; the top five courses were laid in bitumen mortar, the lower courses in mud mortar; the top course was level with the Kuri-Galzu pavement.

In Sq. B 7 was a much smaller base (L) of which there remained only three courses of bricks 0·27 m. ×0·18 m. ×0·07 m., i.e. of regular Larsa type, set in bitumen; below it was a mass of tumbled brickwork suggesting that this was a case of rebuilding over an older ruined structure of the same sort.

In Sq. C 1 there was built up against the Third Dynasty base (H) which lay diagonally across the court an addition (M) in bricks 0·28 m. ×0·19 m. (or 0·27 m. ×0·18 m.), a characteristic Larsa size, and partly on the top of this and partly beyond it was a further addition (N) built of the same bricks; this, however, was only two courses thick and might have been a patch repairing the pavement with the bricks set to match the base instead of parallel to the pavement as a whole.

To the south-east of it was a rectangle (O) 5·80 m. ×2·00 m. in part outlined by a raised coping of bricks laid on edge, which was lined with fine cement, now powdery and decayed. The date of this was doubtful.

In Sqq. D 3–4 there was found underneath the Kassite pavement a short length of burnt-brick wall running south-east to north-west and apparently coming to a clean end at its north-west end; it was cut right into the ruins of the heavy Dungi wall which was the inner wall of the Third Dynasty courtyard, and the bricks of it, 0·255 m. ×0·16 m. ×0·08 m., are of a Larsa type; but it is too fragmentary to give any clue to its character, nor does it correspond to anything of earlier or later date which would help to explain it.

The most curious feature was at the south-east end of the courtyard, where one of the early Isin kings seems to have carried out a work which

may have had precedents in the Third Dynasty, but if so modified them to the extent of suppressing part of the Third Dynasty building. I have already described the Third Dynasty wall which cuts off the south-east end of the courtyard and acts as parapet to the higher pavement south-east of it. The face of this wall was now cut into niches and, towards its centre, slight brick partitions were run out at right angles to it; the fact that these were cut away by the builders of the great Sin-idinnam base is proof of their early date.[1] Now the Third Dynasty wall was carried up with Larsa brickwork to form the north-west casing of a solid mass of mud brick which extended back over the top of the south-east intramural chambers of the court and reached almost to its north-east limits, where there were found traces of burnt-brick casing, giving to the whole an area of 43·30 m. from south-east to north-west and 37·70 m. from north-east to south-west; the foundations on the north-east were sunk 1·50 m. below pavement-level, on the south-east the outer wall of the courtyard building and on the south-west its inner wall retained the huge mass of mud-brick filling. This building, whatever it may have been, had been completely destroyed; the corners of the burnt-brick casing walls had been razed to their foundations and a trench had been driven from north to south through the mud-brick core and through the older burnt-brick pavement on which it had rested. The trench ran across a small sunken chamber contrived in the heart of the brickwork; this could be traced at its north-east end, but the whole of the south-west end had been cut away by a further excavation that had gone down through the Third Dynasty pavement and its original length could not be determined. The chamber was long and narrow, with sides of mixed mud and burnt brick; at its north-east end[2] there remained the lower treads of a narrow flight of steps leading down into the chamber; how far it had continued to the north-east there was nothing to show. The walls of the chamber stood to a maximum height of 1·50 m., and above that level the courses of the mud-brick filling ran on beyond the line of the wall face, proving that this was the full original height; the chamber had been filled with earth packing up to the top of the low walls and then the mud-brick filling of the whole building had been carried consistently across it.

It is difficult to understand the character of a building so completely ruined as is this. On the north-west the Larsa builders utilized the old Third Dynasty wall, but whether the whole of their work was in the nature of a reconstruction cannot be said; if it was, it was a reconstruction on a larger scale, for the solid burnt-brick pavement which survives (Pl. 35 *a*) on the south-east and south-west sides of the Third Dynasty high-level platform was certainly intended to be seen and not to be buried as it is by the Larsa mud brick; and if there was a sunken chamber in the Third Dynasty building, which is possible, all traces of it have been eliminated by the Larsa version. Whether or not a Third Dynasty building stood on the raised south-east

[1] The face of the Third Dynasty wall was so seriously damaged that its precise line is difficult to determine; it may originally have been more strictly parallel to the south-east wall of the courtyard than is shown on the plan.

[2] The irregularity of the north-east wall as given by the existing ruins may not be original.

platform of the great court, in the Larsa period the whole of that platform disappeared under a building which was solid throughout; it may have been merely a higher platform, it may have been a building of some height, possibly even something in the nature of a small ziggurat. In the centre of the area marked out for the building a rectangular pit was sunk 1·50 m. deep in the Third Dynasty floor (or an old chamber there was enlarged) and was lined with bricks, and steps leading into it were arranged at its north-east end; presumably the foundations of the whole building were laid, and it was at this moment only, before the mass had risen to any height, that the semi-underground chamber could have been used. It must have served some purpose connected with the building's dedication. It is quite possible that a temporary structure in wood or in tenting was erected over the low walls so as to secure privacy during the ceremony; as soon as that was over the chamber was filled with solid earth packing and was not supposed ever to be entered again. The fact that it was plundered so thoroughly and at the cost of so much labour[1] shows that the robbers, who must have known the nature of the building, expected to find treasure in the secret storehouse. It was not a mere foundation-deposit, for whereas very many Sumerian buildings have been excavated and their foundation-deposits brought to light, such are seldom of intrinsic value and in no single instance were they placed in a chamber like this; a cavity in the brickwork or a little brick box was the normal and due repository (see vol. vi for the Dungi foundation-boxes or vol. vii for those of the Larsa period). That the chamber was a tomb is unlikely because (*a*) a Larsa king would probably have been buried at Larsa, not at Ur, and (*b*) a royal tomb would almost certainly have been vaulted in brick (cf. the Dungi and Bur-Sin tombs, vol. vi) and not merely filled in with earth as soon as the body had been laid in it. The existence of an underground chamber, presumably containing treasure, in the immediate vicinity of the Ziggurat, between it and a gate of the Temenos, does suggest the theory that we have here one of the subterranean buildings known as *gigunus*;[2] but it is a point that cannot be solved on the scanty evidence that we possess, and the identification would help us little towards understanding what a *gigunu* was.

After the north-west wall of the building had been built, but how long after we do not know—it might have been merely a later phase of the same construction, some slight walls or footings were added against its north-west face: I recorded the possibility that they may have retained and supported steps leading up from the main court to the top of the platform (?), but there is no evidence for this and it remains a supposition. What is important is that these walls were cut short by the building of the great base of Sin-

[1] The general history of the courtyard shows that this must have been done at the end of the Larsa period, i.e. on the occasion of the revolt against Samsu-iluna.

[2] On the *gigunu* see Sidney Smith in *J.R.A.S.*, October 1928. Some of the phrases applied to the *gigunu* are very suggestive, e.g. 'the dark dwelling', 'the place which should not be looked on', as is the fact that it is sometimes at least definitely underground, can be built of cedar-wood (this recalls the temporary structure above the sunken chamber) and is adorned with greenery. For the filling of a sacred construction with earth cf. *A.J.* xi. 4, p. 374.

idinnam in the lower court; it would follow from this that the small walls and *a fortiori* the *gigunu* building itself must be earlier than Sin-idinnam. Enannatum, high priest at Ur during the reigns of his father Ishme-Dagan of Isin and of Gungunum of Larsa, was, so far as we know, the first to restore on a considerable scale the buildings ruined by the Elamite invasion; he worked much in the neighbourhood of the Ziggurat, and it is not improbable that he was responsible for this also.

CHAPTER IX

THE NANNAR COURT IN THE KASSITE PERIOD

The Great Courtyard (Pl. 78).

THE Kassite courtyard of Nannar in its existing form is the work of Kuri-Galzu, whose brick-stamps are common in the masonry of the walls and on the pavement of the open court; what he did was not to repair but to rebuild. No change was made in the size or character of the court, but the Larsa walls were razed to their foundations and on those foundations the new building was erected. On the north-west side of the court we made a cutting to expose the outer face of the fourth buttress from the north angle; the wall stood to a height of 2·60 m. At the top were eleven courses of mud brick of uniform type giving a height of 1·45 m., then six courses of burnt brick totalling 0·54 m.; then there was an offset of 0·10 m., and seven courses of burnt brick (0·60 m.) uniform in type with those above descended to floor-level, having in front of them a strip of good burnt-brick pavement two and a half bricks wide (see Pl. 32 *a*), beyond which was a floor of beaten clay. The wall foundations went down below this in burnt brick, but of the mud-brick walls of the Larsa period not a vestige was found.[1]

A cut made against the east angle of the outer wall of the court showed the Kuri-Galzu brickwork resting on the stump of the Larsa mud-brick wall (see Pl. 32 *b*) and illustrates the difference between the two. The Kassite architect abandoned the elaborate half-column decoration of Warad-Sin and substituted for it a system of square, double buttresses; he used burnt bricks (set in mud mortar for the most part; sometimes bitumen was sparingly used), but only for the lower part of the wall and even so with no uniformity; whereas on the north-west there are thirteen courses of burnt brick above pavement-level, at the east corner there are only four courses, deepening to six farther along the north-east wall where the Larsa wall was more ruined and foundations had to be laid more deeply, and it is probable that none of these courses were above ground; always, for the greater part of its height, the wall was of mud brick, and probably a uniform coating of mud plaster hid the change in material.

Cuts made against the outer face of the south-west wall, on the Ziggurat

[1] A curious feature, distinguishable in the photograph, illustrates the steady rise in the level of the residential areas. Outside Kuri-Galzu's courtyard wall there was obviously a flat space more or less paved. At 5·10 m. from the wall-face, and parallel to it, there was found, resting on the floor-level, a steep bank of earth and rubbish revetted with mud brick and matting; clearly the ground behind had risen and only a ditch was kept clear along the foot of the wall. This ditch was 1·40 m. deep, as shown by a floor-level behind the revetted slope; later it was filled in with stratified rubbish and ashes, and when the filling had attained a height of 0·80 m. a new revetment had to be made to contain the still higher rubbish accumulating beyond it; at 3·10 m. from the wall-face, and starting at 0·80 m. above the pavement, we found a second revetted slope intended to protect a new ditch and support a floor-level 1·10 m. above the old. Above this came more rubbish, and at last a thin line of salt formation denoting an exposed surface ran *down* from the top but one course of burnt brick in the wall, across the disused ditch, and over its revetted bank; the rubbish was now heaped against the wall's foot.

terrace, showed mud brick going down to floor-level. The floor here was of mud, whitewashed, and the wall stood 2·60 m. high and was also plastered and whitewashed; the brickwork seemed to be that of Kuri-Galzu for most of the wall's height, but the top was of later date. At 2·90 m. above the whitewashed floor and 0·65 m. below the terrace level of Nabonidus was a very poor floor of broken bricks and bitumen (the bitumen was sometimes spread directly over mud) which was probably the level of Sin-balatsu-iqbi. At 0·60 m. behind the foot of the wall there was encountered the face of the original terrace filling, which had been weathered or destroyed to a slope prior to the rebuilding of the wall by Kuri-Galzu. The pocket between the slope and the wall was filled with mixed rubbish containing Ur-Nammu cones and Larsa bricks.

The inner wall facing on the courtyard is on three sides of the same character as on the outside, built with a few courses of burnt brick rising above pavement-level and above that of mud brick; the face is relieved by double buttresses corresponding to those on the outer face, but the scheme is modified by the projecting pylon gates of the main doorways in each wall and by the numerous subsidiary doors. The wall foundations are the mud bricks of the Larsa building; on these are laid the Kassite burnt bricks, making an offset of 0·10 m. at about pavement-level, and above pavement-level more burnt brick; as many as five courses remain, but the original height is unknown. The authorship is proved by the existence of a stamped brick of Kuri-Galzu in position in the second buttress from the south-west end of the north-west wall. The south-west wall, which was really the façade of the Nannar temple lying on the Ziggurat platform, was of a different type. Along this Kuri-Galzu carried the elaborate decoration of half-columns and niches which on the face of the north-west bastion he had copied from the original of Warad-Sin. At the extreme north-west end there remains a short section built in burnt brick and still standing seven courses high; the bricks measure 0·34 m. sq. with half-bricks 0·33 m. ×0·165 m. ×0·085 m. and bear the stamp of Kuri-Galzu. Then came a projecting member similarly decorated, the columned front resting on a stepped-out base of plain brickwork four courses high; immediately after its return to the south-east it has been cut away and a new façade in mud brick has been substituted for it on a less advanced line; in the new work there is a straight base of burnt brick and the first half-column has two courses of shaped burnt brick with mud brick above, but thereafter the wall is of mud brick throughout, the bricks measuring 0·34 m. ×0·11 m. Apparently at the same time as this change the wall of the recess in the west corner also was thrown back; the top of Kuri-Galzu's all-burnt-brick colonnade has been levelled and on the top of it, set back 0·7 m., a similar decorated wall built with three courses of burnt brick and mud brick above (Pl. 33 *a*).

The Surrounding Chambers.

On the north-east side of the court, in the Kassite as in the Larsa and Third Dynasty periods, is the main entrance, a triple gateway passing through a

massive pylon whose front is stepped forward by a series of reveals which, curiously, are not the same on the two sides. The actual doorway in the outer wall is deeply recessed between the tower buttresses and has triple reveals; the door-passage leads into a guard-room, through a second door and a second guard-room, to pass out into the court by a gateway also recessed between salients of the back of the gate-tower (Pl. 37 *a*).

Room (*1*), the outer guard-room (Pl. 36). The Kassite walls rested on those of Larsa and had from five courses (south-west wall) to nine courses (north-west wall) of burnt brick; in the south-west wall the two bottom courses, which project slightly, *may* have been of Larsa construction, all the bricks being of the 0·27 m.×0·08 m. type; but in the upper courses here, and in the walls generally, such bricks were mixed with Kuri-Galzu bricks 0·34 m.×0·08 m. and 0·33–0·34 m. sq.×0·075 m., and the exclusive use of old material at the bottom of the foundations is natural. The laying of the bricks is very uneven. In the south-east wall the lowest three courses are stepped forward by a brick's width and consist of Larsa bricks, 0·27 m.×0·18 m.×0·09 m.; only the upper courses, which are of Kassite bricks, are bonded into the south-west wall. In the north-east wall all foundation-courses are of mixed bricks; there is a good bond at the north corner.

Against the top of the third course of burnt brickwork came a floor of bitumen 0·10 m. thick, undoubtedly Kassite. Below this there seems to have been a clay floor with, in the north-east doorway, a threshold of burnt bricks 0·31 m. sq. which was flush with the top of an (empty) hinge-socket box; as the latter lay partly under the Kassite foundations it must date to the Larsa period; a still lower threshold of bricks 0·335 m. sq. may be of the Third Dynasty. The bitumen floor had been remade, a layer of clean mud 0·15 m. thick being laid over it and covered with bitumen to the depth of *c.* 0·15 m. At the entry there was corresponding to each floor a threshold of bitumen laid over brick rubble. At the north-west end of the room, under the upper floor, were four clay jars set as foundation-deposits, one in the west corner, the other three in a row parallel to the north-west wall and 0·60–0·70 m. from it; all were of one Kassite type and all broken; in the largest there were found four miniature Kassite vessels of baked clay, of which one was only fragmentary; the others were apparently empty—they may have contained food. At the north-west end there was also a low hollow pedestal of burnt bricks of mixed types, some 0·42 m. sq. with the Kuri-Galzu stamp; the top three courses were set in mud mortar, the lower in bitumen; the bitumen of both floors was brought up carefully against it. The top courses of brick had been removed and in the masonry was a hollow which had apparently contained a wooden box (at least, fragments of palm-wood adhered to the brickwork), and in it were found a minute band of gold foil, 0·025 m. long×0·005 m., U. 12180, a mushroom-shaped copper nail, and a bent copper peg, U. 12181–2. At the south-east end of the room was a second pedestal, measuring 4·35 m. long; in the side facing the chamber was a recess 0·45 m. wide×0·90 m. high×0·10 m. deep masked by bitumen; in it were found four cylinder seals of glazed frit bearing inscriptions, U. 12688–91. Below the bitumen floors was found a large broken Kassite clay vase, U. 13032, presumably a foundation-deposit, set in a mass of Larsa brickwork; in it were some narrow strips of gold, silver, and copper, shapeless, and probably put as typical specimens of standard metals. Against the inner door of the room was a hinge-socket box of the Kassite period containing a socket-stone of Kuri-Galzu, U. 12503.

Room (*2*). The north-east wall had four courses and the other walls three courses of burnt brick, all bonded together; a layer of soil about 0·40 m. thick separated their foundations from the Larsa mud brick. Against the top course came a pavement of burnt bricks 0·31–0·33 m. sq. which had twice been patched; about 0·20 m. below the bottom of the foundations there remained in the middle of the room part of a burnt-brick pavement, bricks 0·51 m. sq.×0·07 m., which together with a threshold (bricks 0·325 m. sq.) lying at the same level must belong to the Larsa period. In the filling below the floor were found a Kassite clay saucer and numerous examples of a Kassite clay vase type; on the floor was a broken clay tablet, also inscribed bricks of Ur-Nammu and of Ishme-Dagan, probably re-used by the Kassite builders. A brick pedestal stood against the south-west wall (Pl. 37 *b*).

Remains of the Third Dynasty building were found under this as under room (1); here at the south-east end of the room there were found five large clay store-jars (four of which were only fragmentary) which were standing on or had been let into the Third Dynasty mud floor about 0·60 m. below the bottom of the Kassite foundations.

Room (*3*), entered from room (4), was evidently a staircase; in the doorway from (4) one step of mud brick remained, but beyond this the discoloration of the walls seemed to indicate a flight going up at an angle of about 20°, and beyond the return there were signs of flooring 0·70 m. above that of the first threshold; up to this level there is mixed rubbish filling the room; above it there were traces of whitewash on the wall. A ring drain probably belonged to the Larsa period. Amongst the loose bricks in the filling were some of Bur-Sin and of Sin-idinnam, and one or two voussoir-shaped bricks of uncertain date; by the doorway was a socket-stone of Ur-Nammu (*S.A.K.I.*, 186 *a*).

Room (*4*) was paved with bricks 0·34 m. sq.×0·05 m., Kassite, laid flush with the top of the burnt-brick courses in the walls. Immediately below this was a second pavement of bricks 0·04 m. sq.×0·065 m., on the level of the second course of burnt bricks in the walls. Below this again, and below the Kassite foundations, which consisted of three courses of burnt brick only, were remains of a pavement of bricks 0·25 m.×0·17 m.×0·075 m.; more fragmentary remains came about 0·15 m. lower and seemed to agree with the Third Dynasty wall which fills the centre of the Kassite room. The two upper pavements should both be Kassite, the third Larsa, and the fourth Third Dynasty. The mass of Third Dynasty mud-brick wall was cut away, of course, by the Larsa builders; its top comes below the bottom of the Kassite foundations and the later pavements rest on it. Amongst the loose bricks was one of Nur-Adad.

Room (*5*), entered, like (4), from the courtyard, also contains a mass of mud brickwork representing the Third Dynasty building. In the doorway was a threshold of burnt bricks 0·31 m. sq., flush with the lowest course of burnt brick in the walls. Against either door-jamb was a hinge-socket box with its top flush with the fourth course of burnt brick in the walls; they were built of mixed bricks and were of Kassite date; by the north-west wall a few bricks (of Larsa type) projected from the wall's face and ran as far out as the Third Dynasty mud brick; they may have been from a Larsa pavement or have served as foundation for a Kassite pavement; the threshold was probably Larsa. A drain of burnt bricks ran through the doorway into the courtyard; the bricks composing it were of mixed types including some Kassite. No Kassite pavement existed above the drain and it would seem that the floor was of mud only, but no trace of it was detected.

Room (*6*). The walls had three or four courses of burnt brick, bonded at the angles; the bricks were very mixed. Most of the room space was taken up, below floor-level, by Third Dynasty mud-brick remains. No pavement was found.

Room (*7*). Against the door from room (9) was an uninscribed door-socket. The floor had been of clay only.

Room (*9*). By the entrance was an inscribed door-socket of Kuri-Galzu, buried beneath the mud 'apron' when the floor-level was raised 0·30 m. in the time of Sin-balatsu-iqbi. The threshold was of burnt brick, the floor of clay.

Room (*10*) was really a recess opening off room (7) rather than a separate room; it had the air of a *liwan* opening on to a court.

Rooms (*11*) *to* (*19*) contained no features of interest; the only point to be mentioned is that in room (11) there was a door-socket with defaced inscription, apparently of Kuri-Galzu (U. 1663), and in room (14) there was a second door to the roadway running between the courtyard building and the E-nun-maḫ temple. In the south corner of the court there were found below pavement-level two of the Ur-Nammu terrace-wall cones, not *in situ*.

Room (*20*) in the pylon gate-tower must have contained a flight of steps leading up to the Ziggurat terrace, but of this no trace was found. In the back wall, which held up the filling of the terrace, there was a recess by which was a hinge-socket box implying the existence of a door at a higher level. The front door-jambs of mud bricks (0·30–0·32 m. sq.×0·08 m.) rested on but overlapped a foundation of burnt bricks 0·30 m. sq.×0·07 m., below which again were remains of a wall-angle of Sin-idinnam; the front wall ran over the mud-brick back wall of the Third Dynasty building. Below the Kassite level, behind the door-jambs, there were found rough earth steps going down into a pit or box of which the bottom was of clay, whitewashed, and on this were traces of wood; the back of the pit was formed by the face of a mud-brick wall resting on foundations of gypsum or limestone fragments, i.e. the wall of the First Dynasty Ziggurat terrace, the foundations of which were 1·25 m. below those of the existing walls.

The next rooms were not excavated. *Room* (*22*) had against its north-east jamb a door-socket stone with inscription of Gimil-Sin, re-used in the Kassite building; an original door to room (23) had been blocked at a later date and a brick pavement had been added, perhaps by Sin-balatsu-iqbi. Along the whole of the front wall there are two courses of burnt bricks, 0·27 m. sq.×0·08–0·09 m.,

Larsa type, resting on mud-brick foundations, and above these, separated from them by a very thick layer of mud mortar, come the Kuri-Galzu bricks, 0·31–0·33 m. sq. × 0·07–0·09 m., one of which bore his stamp. *Room* (*23*) had no floor and most of the burnt brick had disappeared from the walls. By the door from room (22) was a socket-stone of Kuri-Galzu.

Room (*24*) had against its north-east jamb a door-socket stone of Kuri-Galzu with his E-gish-shir-gal inscription (*Ur Texts*, vol. i, No. 153). It lay hidden beneath a high threshold added by Adad-apal-idinnam, some of whose bricks (0·26–0·28 m. sq. × 0·08 m.) are found on the outer wall above those of Kuri-Galzu. The original threshold was in the form of steps going up to a raised floor, steps 0·16 m. high made of bricks of Sin-idinnam set in bitumen; they may date to his time. The Kassite floor seems to have been of bitumen laid over mud. Below the floor of this and of the other chambers in the range lay the stump of the outer wall of the Third Dynasty building.

Room (*25*) possessed no features of interest. The walls were preserved up to a height of 1·00 m.; the floor was of mud. In *Room* (*26*) there was against the north-east jamb a (re-used) door-socket stone of Ur-Nammu. The walls stood 1·00 m. to 1·30 m. high; the floor was of mud. *Room* (*27*) had against its south-east jamb a door-socket stone with the Kuri-Galzu text (*Ur Texts*, vol. i, No. 154). *Rooms* (*28*), (*29*), and (*30*) presented no features of interest; *Room* (*31*) was possibly a staircase, but was rather wide for such, and the door was not conveniently placed to admit of a flight.

The ground-plan of the building makes its purpose evident. On the north-east is the entrance, with rooms (1) and (2) as guard-rooms, and (3) the stairs leading to the chamber over the gate. Rooms (4) and (5), which have each their own door opening on the court, might be offices. Rooms (6) to (10) form a complex reminiscent of a private house with room (7) as its central court, and it is further distinguished by having a private egress in the north-east wall; I would suggest that these were the quarters of the official in charge of the business of the place. The group of rooms (27) to (31) affords a parallel to the last and might be the quarters of the second in command. With the exception of rooms (14) and (19), which are passage-rooms to the outside, all the rest are clearly store-chambers. The position of the building and its connexion with the Nannar temple on the Ziggurat terrace justify us in regarding it as the outer court of the temple; that it was of a sacred character is further shown by the decoration of its walls in the Larsa period and by the foundation-deposits of the Kuri-Galzu period found in room (1); moreover, the brick base which under the Third Dynasty stood in front of the doorway of room (19) leading to the upper temple area has all the appearance of the altar usually found in this position. It is highly probable that the great court was the receiving-office for the rents and tithes brought to the temple of Nannar by his tenants and dependants and for the offerings brought by the pious for sacrifice; since everything was in kind a large open space and commodious store-rooms were indispensable, and offices for the registration of the goods were no less necessary. The resemblance of the building to the modern *khan* is unmistakable, and the parallel is of value, for the business which I have suggested as being conducted in it is precisely that for which the commercial *khan* is designed.

The interior of the courtyard was paved; there is no sign of any such 'bases' as are found in the Larsa level; the pavement was much broken and had been constantly repaired with bricks of various types; of the original Kuri-Galzu pavement very little remained.

The most interesting feature was at the north-west end of the court, near

the west corner. Here there ran parallel (or nearly parallel) to the columned south-west wall at 3·00 m. away from it a low wall of burnt brick standing only 0·35 m. high above the pavement-level. Below the pavement here there lie the ruins of the old south-west wall of the Third Dynasty courtyard, five courses of burnt bricks set in bitumen mortar, the bricks measuring 0·30 m. sq. ×0·055 m.; immediately upon this but set back 0·24 m. from its edge rests the new wall, of burnt bricks 0·33–0·34 m. ×0·17–0·18 m. ×0·08–0·09 m., the same in type as the stamped brick of Kuri-Galzu in the north-west wall of the court. The base of the wall is 0·15 m. below the surface of the pavement; it is very roughly built, with mud mortar only, and while its south-west face is fairly good its north-east face is most irregular, but the bitumen coating of the Adad-apal-idinnam-pavement forms a perfectly good straight edge against it, so that its outline must have been well defined originally; the brickwork was undoubtedly concealed beneath a mud plaster which has now perished. There were traces of a bitumen coat that had been applied over the mud and had run down over the Sin-balatsu-iqbi brick pavement. In the flat top of the wall there are five shallow circular depressions, 0·55 m. diam., set at regular intervals of 2·50 m., which seemed to be sockets for round wooden uprights. When this was discovered in 1923–4 I was convinced that it was a sleeper wall supporting a row of columns which made a sort of cloister along the south-west side of the court, and I therefore expected to find a continuation of it to the south-east (see *A.J.* v, pp. 6–7). No such continuation was found, and the idea of a continuous cloister must therefore be abandoned. On the other hand, there seems no other explanation of the wall than that it supported wooden columns; the only modification necessary is that these were not part of a general scheme of decoration for the entire wall, but formed an isolated feature; e.g. there might have been here a shelter with a pent-house roof projecting from the columned wall and supported by a row of wooden posts or columns. There is, of course, no need nowadays to argue for the use of the column in any period of Mesopotamian architecture as there was twelve years ago; whether the 'sleeper wall' be of the time of Kuri-Galzu or of Adad-apal-idinnam, there is no inherent improbability of its having supported columns. The only real question is that of date. The wall would seem to belong to the Kuri-Galzu pavement in which it is incorporated, but the bitumen coating which was applied to its surface connected it with the higher Adad-apal-idinnam pavement, and it is therefore possible that it was originally built for some other purpose and was turned into a base for the columns only in the eleventh century B.C.; it is equally possible that it was originally a column-base and was re-used as such by the later builders. The stamped bricks of Adad-apal-idinnam come in the patched pavement area between the sleeper wall and the south-west wall of the courtyard.

In the filling of the courtyard there were found a few objects of uncertain date which may be listed here: U. 1353, a fragment of thin gold leaf cut into the form of the leg and hoof of a bull, presumably for incrustation-work, (0·016 m.); a shell amulet, U. 1359, in the form of a clenched fist; two small

copper drills (?) U. 1361–2; a fragment of a bottle of variegated glass, with a blue-grey leaf pattern on a white ground, was presumably Kassite (U. 1404); a cylinder seal, U. 1487; a stone plumb-bob, U. 1509; a fragment of buff pottery on which is incised a (fragmentary) drawing of a seated animal (U. 2605); a clay tablet of Dungi's reign dealing with stores issued from the *Ga-nun*, U. 2702, and an impression on clay from the seal of one Ama-áb-gi, wife of Shesh-kalla, U. 2650. There were also a few fragments of inscribed stone (U. 10614, 11677) and a number of clay tablets of varied dates.

CHAPTER X

THE NANNAR COURT IN THE NEO-BABYLONIAN PERIOD

BY the seventh century B.C. Kuri-Galzu's courtyard buildings must have been in ruins. The outer wall was still in good condition (though its foot was buried under accumulated rubbish) as high as the raised level of the courtyard, but above that level the walls of the chambers surrounding the open court were in a very bad state; on the north-east and south-east sides the mud brick was still preserved at least to the height to which the walls stand to-day, i.e. to nearly two metres, but the south-west wall with its decoration of half-columns seems to have been virtually destroyed. The pavement had been patched many times—the only stamped bricks in the newer work are those of Adad-apal-idinnam, 1062–1041 B.C.—but now was past mending.

Sin-balatsu-iqbi's first task was the repair of the inner south-west wall. He dismantled all that was left of the burnt-brick façade of Kuri-Galzu, except for a short stretch in the west corner where he changed the line, setting his wall-face 0·60 m. back behind the old, and rebuilt it in mud brick to the same pattern; the wall found by us remarkably well preserved, with the mud plaster and much of the original whitewash still adhering to it (Pls. 33 *b*, 34), was the work of the Assyrian governor. He then raised the floor. Along all the wall-faces was set an 'apron' 0·60 m. high of mud bricks placed on end and leaning back against the wall at an angle of about 60°, and the whole was covered with a mud plaster (Pl. 33 *b*); this was to protect the mud-brick footings of the wall from damp. Then the floor was raised by a layer of earth 0·60 m. thick; in the courtyard a clay floor was considered sufficient, in the chambers surrounding it there was sometimes a clay floor and sometimes a brick pavement.

Sin-balatsu-iqbi's building being throughout in mud brick and therefore yielding no brick-stamps, it is only by considerations of level and of the size of bricks that we can determine what is his work; indeed, the whole question of authorship would have been doubtful but for the fortunate chance of our finding one of his foundation-cones under the mud floor against the wall-face in the main gateway of the south-west wall, i.e. in the gateway leading from the courtyard to the Ziggurat terrace. The text (*Ur Texts*, vol. i, No. 183) states that the ruler had built anew for Nannar his beloved temple E-temen-ni-gur; we have therefore the further assurance that the courtyard albeit at a lower level than the terrace did share its name and was therefore an intrinsic part of it. Also in the mud 'apron' in room (1) was found a copper figurine of a dog, U. 12183, presumably an apotropaic offering.

The next reconstruction was taken in hand by Nebuchadnezzar. The

great change that he made was the raising of the level of the courtyard by some 2·00 m., i.e. virtually to that of the Ziggurat Terrace;[1] his new court was paved with bricks bearing his stamp, of which a few remained in position near the south-east and north-east walls, in spite of the general denudation of the site. In the north quarter of the court he made a well, its sides carefully built with segmental bricks many of which bear his stamp; whether or not he was an originator in this cannot be said, for only the upper part of the well's structure was cleared by us, and while all was of his work it is quite possible that deeper down the building might have proved to be that of an earlier king (cf. the well on the terrace, p. 32). For the packing required under the new pavement soil had to be brought in very large quantities and was specially excavated for the purpose; in the neighbourhood of the well, and particularly between it and the north-east wall of the court, we were surprised to find that below the level of the Nebuchadnezzar pavement the earth was full of fragments of al-'Ubaid pottery, and it was under this uniform and apparently prehistoric stratum that we found the pavement of Kuri-Galzu: had that pavement not existed we might have been seriously misled; as it was, we could safely conclude that the Neo-Babylonian workmen in search of filling had tapped an early level.[2]

We have to thank the raising of the court pavement for the preservation of its older walls and floors which were safely buried beneath it; to the same fact of Nebuchadnezzar's building lying so high is due its complete destruction. Apart from the few fragments of paving towards the east corner which have already been mentioned, nothing at all that had been above ground survived; fortunately, enough remained below ground to prove that his buildings were a reproduction of the old.

Against the inner jamb of room (4) as marked on the Kassite plan there was found a hinge-box with an (uninscribed) door-socket stone at 2·00 m. from the modern surface, i.e. *c.* 1·40 m. below the Nebuchadnezzar pavement-level and well above the level of the Sin-balatsu-iqbi floor; the doorway was therefore re-used by Nebuchadnezzar. In room (5) the top sixty centimetres of the wall showed signs of having been rebuilt with mud bricks of a size similar to that of the Kassite bricks (0·34 m. sq.) but of slightly different texture and alinement; this would seem to have been the work of Sin-balatsu-iqbi. A few bricks of the pavement of the room were left flush with the modern surface, and opposite the door, in the courtyard, were more considerable pavement remains of Nebuchadnezzar bricks 2·00 m. above the Kuri-Galzu pavement; another patch of pavement survived outside room (14). On either side of the courtyard doors of rooms (26) and (27), in the angles of the inner reveals, there were foundation-boxes each made

[1] It might be suggested that this accounted for the raising of the terrace by Nabonidus, who with his passion for old traditions as against the religious innovations of Nebuchadnezzar may have wished to restore the old relation between the two areas.

[2] If the well was made by Nebuchadnezzar, then, since it would go down right through the al-'Ubaid strata, and since the excavated soil would naturally be heaped close by for the raising of the court-level, the presence of the pottery in the neighbourhood of the well-head (and nowhere else) would result automatically. This was my assumption at the time, and the reason why I did not carry deeper the excavation of the well-shaft.

of three bricks set on end and one laid over the top, the bricks stamped with the name of Nebuchadnezzar;[1] they lay below the Sin-balatsu-iqbi floor, on the Kassite pavement (see Pl. 38 *b*); they contained only earth and, in each case, a fragment of a plain pottery vase; there had probably been in them food-stuff now decayed. These constitute the final proof that the latest Neo-Babylonian building was a replica at a higher level of the Kassite.

At the south-east end of the courtyard there was a solidly built brick drain of Nebuchadnezzar which passed through the doors of room (14), under the (vanished) late threshold; it connected with the big drain running between the outer south-east wall of the courtyard and E-nun-maḫ (see Pls. 35 *b* and 75); in the courtyard it forked and finally broke away, but before the fork there was an intake like those of the main drain. The sinking of the packing of the courtyard has altered the levels and the drain now seems to slope down from south-east to north-west; originally the slope must have been the other way, and the purpose of the drain was to carry the surface water from the court into the main sewer; there must have been at least three intakes.

In room (1) (the guard-chamber) there was a mud floor with the sloped bricks round the foot of the wall; behind them was found a copper figure of a dog, U. 12183, evidently a foundation-deposit. Against the north-west wall were remains of a pedestal of mud brick. Room (2) had the same mud floor and sloped bricks; in the upper filling of the room was found a gypsum mace-head of the early dynastic period, U. 11678 (see vol. ii, Pl. 183). In the filling of room (4) was a fragment of a diorite stela.

[1] The sides of the boxes against the door of room (25) were of mud brick with a burnt-brick cover; the other two boxes were of burnt brick.

CHAPTER XI

THE ZIGGURAT OF UR-NAMMU

IN ground-plan (Pl. 79) the Ziggurat is a rectangle 62·50 m. by 43·00 m., situated with its angles orientated to the points of the compass so that its sides face respectively north-east, north-west, south-west, and south-east. The walls are relieved by buttresses set 4·40 m. apart, each 2·60 m. wide and with a projection of 0·45 m. The sides are not drawn as straight lines between the extreme points but are in effect curved (Pl. 51), the front of each buttress and each intra-buttress space is a straight line, but these segments are arranged on an arc which in the centre of the long (north-east and south-west) sides has a depth of 0·50 m. and a corresponding curve on the short sides of the rectangle. At the corners the buttresses have greater width than elsewhere, the greater width being calculated to tie up the design of the whole and so to give to it a greater unity and solidity of appearance; on the north-west and south-east sides the second buttress from the south-west is broken by a vertical drain whose purpose will be discussed later.

Against the north-east side or front of the Ziggurat there was laid out the approach to the building. Two staircases starting from the north and east corners respectively ran up towards the centre, cutting with a transverse line across the building's face; from the centre a third staircase at right angles to the façade was planned to run at the same slope as the other two and projected 28·00 m. from its base. In each angle between the central and the side staircases there was a bastion 12·30 m. deep and with a frontage of 14·00 m.; the bastions were to rise to a less height than the stair-head, and within them in the stair angles were small buttresses which supported the gateway in front of the landing on which all three stairways converged. The angle bastions were decorated in front with elaborate grooved niches having three reveals on each side; their side walls were plain except for vertical drain-shafts like those in the north-west and south-east sides of the Ziggurat itself; the containing-walls of the central flight of steps and the outer walls of the side flights were plain.

The walls of the Ziggurat rose with a pronounced batter of 1·77 m. in 10·00 m., but this is accentuated by the fact that the wall-face itself is built on a curve (see Pl. 51), of which the depth is 0·11 m. on a base of 10·00 m., this curve, which seems to correspond to the entasis of a Greek column, being intended to give an appearance of greater strength to a containing-wall holding up so massive a superstructure. The walls and buttresses alike are pierced at regular intervals by 'weeper-holes' left in the brickwork, which run through the burnt-brick encasing wall and to the heart of the mud-brick core.

The casing of the Ziggurat, the wall proper, is of burnt bricks (a good many half-bricks are used) measuring 0·29–0·30 m. sq. ×0·07–0·08 m., many

of which are stamped on one face with the name of Ur-Nammu;[1] the stamped face is always laid underneath. The mortar is bitumen. The thickness of the encasing wall towards the top of the lowest stage (for ground-level we have no evidence, but it was probably the same) was 2·50 m. The core of the monument is of mud bricks, 0·25 m. ×0·16 m. ×0·065–0·070 m., laid in mud mortar without any matting between the courses, and the method of laying with courses of bricks laid flat and courses of bricks set on edge is explained by the drawing on p. 113; the courses are so arranged as to give to the core the same batter as is seen on the outside of the encasing wall, i.e. the whole thing was built by adding successive skins of brickwork round a core which had itself the form of the finished monument. It can safely be assumed that the ultimate core was the older Ziggurat, that dating to the First Dynasty of Ur; it was impossible to prove this without doing irreparable damage to what is the best-preserved example of a ziggurat in Iraq, and we are, therefore, unable to say how thick was the covering of mud brickwork built by Ur-Nammu round and over the ziggurat of his predecessors; the precise measurement is a matter of curiosity rather than of scientific importance, and it was not necessary to supplement by so dearly bought information from Ur what had been learnt from the excavations at Warka[2] and at Nippur.[3]

At a certain stage in the process of construction the lowest stage of the Ziggurat stood apparently complete in mud brick; the burnt-brick skin was added to this with no attempt to bond the two materials together. For the burnt brickwork a foundation was laid projecting from 0·25 m. to 0·75 m. beyond the wall-face proper, 0·30 m. high, continued by a mass of burnt brick and bitumen which itself projected another 1·50 m. and, having a slightly sloped surface thickly coated with bitumen, acted as an apron to carry off water from the foundations; the top of the foundation-course was flush with the pavement of the Ziggurat terrace; at the south-east end there seems to have been no pavement, but a clay floor 0·15–0·20 m. thick; if there had been brickwork above this it had been removed.

The pavement of the first stage was 11·00 m. above the Ziggurat terrace-level; the encasing wall rose somewhat higher to form a parapet.

Up to this point the work of Ur-Nammu is astonishingly well preserved. Nearly the whole of the encasing wall of the main structure, which at the

[1] The absence of any evidence of the part taken by Dungi in the building is to be explained by the fact that the material was prepared in advance, so that the death of Ur-Nammu left his son provided with sufficient bricks for the whole construction although he died when only the lowest stage of the Ziggurat was complete, or not even that. This is perfectly clear from the comparison of texts and of the monument itself. Nabonidus' cylinders state that the work on the Ziggurat was begun by Ur-Nammu, and, because he could not finish it, was carried on by Dungi, and the statement is based on the wording of the Third Dynasty foundation-deposits which Nabonidus discovered; the foundation-deposits, therefore, were engraved in the reign of Dungi, after the death of Ur-Nammu. We know where the foundation-deposits were placed by Dungi, low down in the angles of the brickwork of the second stage where we found the hole made by Nabonidus' workmen who dug in search of them; the second stage, therefore, was built by Dungi, but the bricks of which it is built bear the stamp not of Dungi but of Ur-Nammu and were obviously made to his order; Dungi's own witness as reported by Nabonidus is the more important in that it corrects the misleading evidence of the bricks.

[2] *Ausgrabungen in Uruk 1928/29* and *1929/30*.

[3] J. P. Peters in the *American Journal of Archaeology*, x, p. 13.

north-west end still stands to a height of 11·30 m., is original. It has in some places been damaged in the past and patched by later rulers, but this has been so skilfully done as not to deface in any way Ur-Nammu's brickwork; where a new brick had to be inserted it would sometimes seem to have been manufactured specially to the same scale as the old, and it was only the finding of a (re-used) stamped brick of Bur-Sin low down near the west corner on the south-west side that pointed out to us a repair which otherwise we should not have suspected. Naturally the face of the walls has suffered from the effects of time. The upper part is very much weathered; only the lower part which has longest been protected by fallen debris conserves its original character and has almost the effect of new work. It is curious to notice that destruction was not gradual, but occurred at three definite intervals —we can suspect earthquake as the cause, for the brickwork at the south-east end has been detached from the side walls in a manner which nothing else could explain—and each disaster resulted in the forming of a fresh mass of fallen rubbish against the face of the building; these successive masses in turn protected the brickwork, but the winter rains falling on the rubbish brought to the surface the organic salts which it contained and the salts have eaten deeply into the bricks and have produced long, irregular bands of pronounced decay which give the contours of the mounds; below each such band the wall-face is better preserved than above it, until below the surface of the oldest debris we find preservation almost perfect. The progressive deterioration of the brickwork can be seen in the photographs (Pls. 40, 49, and 50), and is conventionally represented on the architectural elevations on Pls. 80–3.

The staircases suffered (Pls. 43 *a*, 44 *a*, 47 *a*) much more severely. The lower parts only of the retaining-walls are the work of Ur-Nammu, the upper parts are restoration; all the treads date from the Neo-Babylonian reconstruction and are at a higher level than the original.

At the foot of the northern flight of side steps the bottom tread of the Nabonidus stairs is 1·05 m. above the tread of the Ur-Nammu stairs on which it is built up; the new brickwork is not bonded in to the Ziggurat or to the balustrade wall, which at this level is original, but on the level of the second Nabonidus step there is *in situ* in the balustrade wall a stamped brick of the Neo-Babylonian king, showing that at this point the masonry is his work. The ground-level round the Ziggurat was raised by 1·50 m. between the time of the Third Dynasty of Ur and Nabonidus, as is proved by the height of the lowest tread, and the rebuilding of the retaining-wall of the staircase, therefore, started virtually at ground-level; the work was of poor quality, bitumen mortar being employed freely low down (the bitumen is poor and crumbly) but decreasing in proportion as the wall rises until only mud mortar is found; this may be due to carelessness rather than to dishonesty, as when bitumen is used it is sometimes used lavishly. In the foundation of the Nabonidus balustrade wall of the northern side staircase was buried a large three-handled clay pot 0·36 m. high, lying on its side; it was empty, but a stain coming half-way up on the inside showed that it

had contained a liquid; it was certainly a foundation-deposit, for it lay under and in the brickwork which at this point projected beyond that of Ur-Nammu and rested on loose rubbish. Here (Pl. 42) the Third Dynasty wall has been refaced up to a height of 1·35 m. above the Neo-Babylonian floor-level, only the inner side against the treads being old; the late bricks measure 0·27 m. in length and run five courses to a vertical height of 0·30 m. as against the Ur-Nammu standard of 0·30 m. length and five courses to 0·35 m.; the mortar is mostly mud, but the bricks seem to have been dipped in bitumen before being laid. This part of the balustrade would appear to have been repaired by some intermediate ruler, probably of the Larsa period, and re-used and patched by Nabonidus; the surface is irregular, as might be the case with old work, and as it was entirely masked by the mud-brick back wall of the Neo-Babylonian shrine occupying the stair angle (see p. 69) there was no great need for Nabonidus to rebuild it. Below the high blocking for the Nabonidus treads there are visible at the foot of the northern stairs remains of the Third Dynasty flight; the bottom step, *B*, four courses, 0·32 m. high (see Pls. 43 *a* and 80), is apparently original, projecting slightly outside the line of the north-west face of the Ziggurat, but alined with it; above this comes a step which is certainly broken, for the top 'tread' consists only of an edging of bricks with rubble behind, a second broken brick tread and a third of which only 0·20 m. depth is brick and all the front of it, up to 0·60 m., a mass of bitumen; *B* may well be the original bottom tread with below it the remains of the projecting foundations which lay below the pavement now destroyed.

On the south-east flight (Pls. 47 *a*, 82) the same phenomena appear; the lowest tread of the Nabonidus steps rests on a block of brickwork going down below the contemporary ground-level, from the vertical face of which at a point 1·10 m. below the bottom tread there is a course projecting 0·05 m. which is the bottom step of the Ur-Nammu stairs; beyond this and 0·15 m. lower there were the remains of the brick pavement of the Ur-Nammu terrace. In the central staircase all the Nabonidus treads and their support have disappeared, and of the Ur-Nammu treads also nothing remains.

At the top of the north-west flight of steps a cut was made through the Neo-Babylonian brickwork and the remains of the Ur-Nammu steps were exposed (Pl. 52 *b*). The bricks used were 0·25 m. sq. ×0·055 m., set in bitumen; each step was two courses high and apparently 0·29 m. deep (they were not well preserved) and consisted of two courses of burnt brick laid over mud brick; the treads were not bonded into the side walls. Here the Nabonidus pavement had gone and exact measurements were therefore impossible, but the rise in level was approximately the same as at the foot of the staircase, i.e. 1·10 m., and it is evident that the Neo-Babylonian work is a careful imitation of the old and can confidently be taken as reproducing it; although the Ur-Nammu stairs were not followed up throughout by us, they can be safely and accurately restored as running about 1·10 m. below the new.

At the stair-head the north-east wall of the Ziggurat itself falls back in a

deep, rectangular recess in the corners of which are two solid blocks of brickwork constructionally distinct from the Ziggurat building proper (Pls. 53 *b*, 81); there is a clear gap between the face of the Ziggurat wall and that of the brickwork block, and although the face is not a good one and implies that it is more or less an accident of construction (it looks as if the blocks were built first and the Ziggurat wall was carried round them), the fact that the blocks are thus clearly delimited means that they were designed to serve a purpose other than that of the retaining-wall. I have spoken of two blocks; it is, however, quite possible that they were originally one. Taylor, in his excavations carried out in the middle of last century, cut a trench through the brickwork here (Pl. 62 *b*), destroying all that he encountered, and it is no longer possible to understand exactly what he did find; at present there is between the two blocks a deep cut, carried down into the mud-brick core of the Ziggurat, with broken brick edges on either side (Pls. 53 *b*, 54). The impression given by a few straight lines of brick is that while there may well have been a common foundation running across the whole width of the recess, on this were built two independent L-shaped piers; that there were projections to the north-east is certain, for they still remain, and that there were two piers rising at a higher level is also certain, for there had to be a passage-way corresponding to the central flight of stairs below; the only point at issue is whether the whole of the existing brickwork was originally continuous across the recess or whether the straight face distinguishable on the inner side of the north-west block is a true face; in the latter case, which seemed to me probable, we have the actual form of the pier as it rose above floor-level, and the brickwork projecting at a lower level both from this inner face and in the angle of the L is the foundation of the steps and platform respectively. The piers are the work of Ur-Nammu; many of the bricks are stamped on the under side; they are laid in bitumen mortar with layers of matting between the courses; the bricks are 0·29 m. sq. The north-west pier is the better preserved. If its data are correct, there was between it and the south-east pier a passage 1·30 m. wide; on the north-east (where it is much damaged) it would seem to project not less than 0·70 m. beyond the line of the retaining-wall of the Ziggurat, narrowed by a reveal on its north-west face; the south-east pier has on the level of the landing pavement a projection to the north-east of 0·60 m. from the retaining-wall.

Corresponding to the two piers there were two blocks of brickwork at the points of junction of the side and central staircases; these were constructionally one with the retaining-walls of those staircases, but projected beyond them to form the small buttresses in the staircase corners. That between the central and south-east staircase was destroyed below floor-level and nothing could be learnt from it; of that between the central and north-west staircases (Pl. 43 *b*) enough remained to show that above floor-level it was set back from the frontage-line of the corner buttress; to what extent this was done the evidence did not show. On the south-west side a projection of the brickwork corresponding to that on the north-west pier was clearly the second jamb of a doorway at the head of the north-west stair-flight (see plan, Pl. 79).

I have remarked that in the west angle of the gate-tower a few bricks project from what I have taken to be the wall line: they are stepped up to the south-west and seem to be the end of a staircase; the lowest of them is higher than the top step of the north-west flight found outside the tower wall line. In the reveal in the outer face of the south-east pier a single brick seemed to give the level of the stairs at this point, and again it was lower than the high remains in the west corner inside the tower; between the door-jambs at the top of the north-west flight there are no remains of burnt brick at all, and the absence of such would imply that the usual Sumerian custom of carrying the steps up through the thickness of the wall was followed here, for had there been a threshold on the level of the topmost remaining step it would have been preserved, whereas since everything is ruined down to that level one can argue to steps going up which would have left no trace of themselves. Any reconstruction, then, must show the stairs continuing to the line of the inner wall-face, and since by then the level of the bricks remaining in the west corner will have been reached the pavement of the gate-tower will be flat between the north-west and south-east stair-heads and to the head of the central stairs. Its level above ground was 12·00 m.

The gate-tower, it should be remarked, is outside the Ziggurat proper, in spite of its back wall being built in a recess of the containing-wall; it is as much an excrescence as the staircases themselves against the face of the lower stage; access to the latter had still to be contrived, and obviously such access was through the door in the south-west wall of the gate-house. Unfortunately here destruction had been very thorough and the remains were difficult to interpret; part of the damage had been done by Taylor's excavations, part seems to have been older; it would be well to preface my description by quoting verbatim Taylor's account of his own work. He says:[1]

'The first point at which I commenced excavating upon the big ruin was at the head of the staircase. The sketch (no. 2) [see Pl. 62 *b*] will give some idea of the excavation here: (*cb*) is a breach I found in the wall, the space behind it filled with rubbish, and backed, as will be seen in the sketch, by the solid sun-dried brick mass inside. At (*c*) I commenced sinking a shaft, which I worked for a depth of 14 feet through the same kind of loose debris; I then tunnelled straight into the centre of the mound for 36 feet, and for a breadth of 8, gradually diminishing to 4 feet. At this point I desisted from any further attempts, the entire ruin seeming one solid mass. The whole excavation at the head of the staircase presented one mass of rubbish, similar to the heap at the right hand of the sketch. In clearing this rubbish away I found nothing of interest up to (*dd*) with the exception of pieces of blue enamelled bricks and large copper nails. At (*dd*) and also immediately below them, on the ground, I found the fragments of the barrel cylinder, which were resting for the most part on the ledge of the solid mass of masonry, commencing at (*e*). These must have fallen either from the top of the building or from one of the niches (*fg*). I must note, however, that these relics were found more than 6 feet from the wall (*c*).

'I first passed between two solid masses of stone [*sic*] masonry, about 4 feet high and 10 broad; at the other side was a passage, 6 feet broad; passing this, we came to a solid piece of masonry, which is continued up to the wall. The passage I cleared was 12 feet broad at the commencement, for 25 feet; it then narrowed to 6 for a few feet, after which it gradually narrowed to 3 feet, this last part having the appearance of an arch, broken through the centre. The mass of masonry (*e-d*, plate 2) is perfectly incomprehensible; from the corner (*h*) to (*i*) the mass seems separated from the opposite piece (*k*), as both walls (inside) are perfectly smooth and distinct, and 2 inches distinctly apart from each other; from (*i*) onwards, however, the whole seems blended in one

[1] In *J.R.A.S.*, vol. xv, 1855.

common mass of alternate thick layers of kiln-burnt and sun-dried bricks, presenting the form of a ruined arch. This is plainly seen running into the mass at the back of the breach, the bricks there being in thinner layers, and one overlapping the other, till it is reduced to a single brick. The passages seem to run entirely to the end of the ruin. Had I cleared away the heaps of rubbish to the right, I have no doubt I should have found the ruin presenting the same features as the masses I had already cleared. I found the interior of the ruin to be a solid mass, consisting of—firstly, a layer, 10 feet thick, of partially burnt bricks, 13 inches square and 5 thick; after this were layers of sun-dried bricks, diminishing in size to 6 inches square and 2 inches thick, and so firmly built, that the whole seemed a compact mass, extremely difficult to demolish; our progress here being scarcely 3 feet a day.'

From the account it would appear that a breach had already been made at the stair-head resulting in the destruction of the continuous foundation of the back of the gate-tower. The 'separate mass of masonry *e–d*' which Taylor found incomprehensible is the south-east pier of the tower, which he very correctly describes; his 'passage' I take to be the trench made by former excavators, cut through the solid brickwork and in Taylor's time filled again to its full depth (14 feet) by loose debris. The panelled wall *f–g* in the sketch was standing considerably higher in Taylor's time than as found by us. The main interest centres on *c*, described by Taylor as presenting the form of a ruined arch. One phrase used by him needs correction: when he speaks of 'alternate thick layers of kiln-burnt and sun-dried bricks' he means only 'a layer of kiln-burnt superimposed on a layer of sun-dried bricks'; with this verbal emendation the account is correct, so far as it goes.

Starting from just inside the line of the south-west jambs of the two side doors in the gate-tower there is a mass of burnt brickwork which occupies the south-west part of the gate-chamber, narrows down to pass through its south-west door, and then widens out to a total of four metres. It had indeed been cut into two by the breach, Taylor's 'passage' continued from stair-head, but the broken faces of the bricks on either side of the breach showed that the mass had originally been continuous. For its upper fourteen surviving courses it was separated by a break in bond from the gate-house pier (see the section, Pl. 82), but below that there was no such break and the construction was uniform over all; i.e. a common foundation had been laid and only after eight courses of bricks were in position had the bricklaying been modified so as to distinguish between the different functional elements of the building. At its north-east end the mass has at present a thickness of twenty-two courses of burnt bricks, but the top has been denuded and judging from indications on the surface of the pier there had originally been twenty-six courses instead of twenty-two. From its front edge the upper surface of the mass slopes upwards towards the south-west, but it very soon becomes horizontal, having been shaved flat, or very nearly flat, by the workmen of Nabonidus who wished to lay over it the foundations of their own building. The under surface at first is stepped down, so that the mass acquires a maximum thickness of thirty-one brick courses; then it mounts up very regularly in inverted steps to two courses high and 0·30 m. deep, resting on the mud brickwork, which had, of course, been correspondingly stepped; there remain ten steps, and thereafter the burnt brickwork ends. The only reasonable explanation of this construction is that we have here

the lower part of an exceptionally solid stair-flight constructed in burnt brick over a mud-brick foundation; the gradient of the surface would be the same as that of the mud brick, and the surface steps would reproduce the inverted steps of the under surface of the burnt brickwork. A stairway of some sort is essential here if the lower flights are to serve any purpose; why the construction should be so massive I do not know, but though the treads have been cut away by Nabonidus the fragmentary remains do seem to me to justify a detailed reconstruction of the flight.

The steps would begin in the wall thickness of the gate-tower, i.e. would run through the south-west doorway of that tower, according to the normal Third Dynasty convention. Beyond the gate-tower the top surface of the brick mass is actually 13·60 m. above the level of the terrace on which the Ziggurat stands and, allowing for the disappearance of the top four brick courses to which I have referred as indicated by the ruins, the level attained would have been 14·20 m.

We can now take the remains on either side of the gate-tower.

Immediately adjoining its piers, on the south-east, there stretches a fragment of pavement consisting of eight courses of burnt bricks set in bitumen laid over the usual core of mud brick; the size of the latter varies from 0·28 m. to 0·32 m. by 0·17 m.; the burnt bricks measure 0·20 m. sq. by 0·045–0·06 m. thick, and many of them bear the stamp of Ur-Nammu; the pavement is bonded into the retaining-wall of the Ziggurat, which at this point is preserved to its full height except for the parapet; the pavement surface is 14·20 m. above the level of the Ziggurat terrace.

To the north-west of the gate-tower, not immediately adjoining it, but preserved against the upper stage wall and the little Neo-Babylonian staircase, is a second patch of the same pavement lying 14·20 m. above the level of the Ziggurat terrace, consisting of eight courses of burnt bricks of Ur-Nammu and thickly overlaid with bitumen; the bitumen coating is late, and the surface of the brickwork has been patched here and there with late bricks —as is to a less extent the case on the south-east side of the central stairs— but the main authorship is certain and the stamps of Ur-Nammu are common. Both sections of pavement give precisely the level reached by the short flight of steps occupying the south-west doorway of the gate-tower, and obviously there was here a landing which interrupted the stair-flight and ran flush on either side of it for at least 8·00 m., the distance for which the pavement is actually preserved.

On the north-west side of the central stairs the pavement runs back first to the retaining-wall of the second stage of the Ziggurat and thereafter to the little flight of steps built against the wall (Pl. 53). The steps are built on the top of the pavement and are constructed of burnt bricks of Nabonidus; the bitumen coating over the pavement is contemporary with them. The retaining-wall above the pavement-level is of Neo-Babylonian date and is constructed entirely of Nabonidus material, but where its lowest courses are exposed by the breach (Taylor's 'passage') which cuts right through it these are found to be by Ur-Nammu. The Neo-Babylonian second stage

of the Ziggurat, therefore, was at this point conterminous with that of the Third Dynasty, and the Nabonidus wall is simply rebuilt on the ruins of the old.

On the south-east side of the central staircase the evidence is not quite so easy to interpret. Here the pavement is only 2·30 m. wide; it runs back from the retaining-wall of the Ziggurat, into which it is bonded, to a buttressed wall of burnt brick standing almost a metre high, which is proved, both by its character and by the fact that it is the retaining-wall for the solid core of Neo-Babylonian mud brick extending over the whole central part of the Ziggurat, to be the retaining-wall of Nabonidus' second stage. This wall, however, is not alined with that to the north-west of the central staircase, but forms a salient 2·20 m. outside its line. At its south-east end there survives the greater part of a buttress, then comes a recess 3·60 m. long, then a corner buttress 3·90 m. long, and then a return 2·20 m. long which joins it to the retaining-wall already described as running from here to the north corner of the second stage; just beyond the angle of its juncture the latter is interrupted by Taylor's breach.

I was at first inclined to assume that here again we had a Neo-Babylonian wall exactly corresponding to one of the Third Dynasty; for whereas above pavement-level the bricks were exclusively of the late period at the south-east end of the line and almost entirely late at the north-west end, yet the foundations throughout were of Ur-Nammu bricks and near the north corner two or three such bricks occurred in the wall-construction proper. The assumption, however, was incorrect. The wall is altogether of late date; it is simply built upon the Third Dynasty pavement, a fact which accounts for the Ur-Nammu bricks below it, in what serves as its foundation, and the few early bricks at the north end are mixed with Neo-Babylonian bricks and are certainly old material re-used. The real retaining-wall of the second stage in the short section preserved south-east of Taylor's breach has its eight lower courses composed of Ur-Nammu bricks, while stamped bricks of Nabonidus occur in the ninth and higher courses; the same is true of the return wall of which the lowest (Ur-Nammu) courses are bonded into the solid brickwork of the pavement south-east of the gate-tower.

It has been remarked that the gate-tower is outside and almost independent of the Ziggurat proper. The retaining-wall of the lowest stage returns against the south-east face of the south-east pier and then returns again immediately behind it and is bonded into the brickwork of the upper stair-flight; the latter, therefore, is constructionally one with the retaining-wall, and the gate-tower is set in a recess in the centre (approximately) of the Ziggurat façade. From behind the back wall of this recess the solid brick block of the upper stairs runs south-west to join the wall of the second stage of the Ziggurat; the outer (south-east) face of the block, which is really the outer face of the balustrade wall containing the stairs, has a pronounced batter. Between it and the return wall already mentioned as running underneath the return wall of the Neo-Babylonian salient there is a narrow, oblong space 2·55 m. long by 1·40 m. (Pl. 55); the area, which is low-lying, has been

partly filled in and floored with a carefully made 'crazy pavement' of burnt bricks, many of which are segmental in shape and must have been taken from well-heads; the square bricks are 0·35 m. sq., the segmental bricks are from circles 3·10 m. and 4·60 m. in diameter respectively;[1] resting on the pavement was a cross-wall running north-west by south-east having a foundation of five courses of burnt bricks 0·35–0·36 m. sq. ×0·07 m. set in bitumen, over which remains a single course of mud bricks apparently 0·25 m. ×0·16 m. The cross-wall is necessarily later than the pavement; for the latter there was no proof of authorship, and it is probably later than the Third Dynasty; but although the pavement may not be original the enclosed area certainly is. Constructionally the scheme is one of a recess behind a recess; the outer is occupied by the gate-tower, across the inner runs the upper flight of stairs, and the walls of both recesses contain the mud-brick core of the Ziggurat. Why the space was left between the recess side and the stairs it is difficult to say; as, owing to its low level, it would have had the effect of a pit against the stairway it was probably filled in from the beginning, and I suspect that it was a receptacle for a foundation-deposit. Taylor did find foundation-cones close to the head of the main staircase, and though from his account it is impossible to say precisely where they were found it may well have been within this walled space; they were, of course, cones of Nabonidus, but such may well have been substituted for the Third Dynasty originals.[2]

To sum up the evidence thus far, the façade of the salient south-east of the central staircase is exclusively late; the brick pavement, which in front of that salient is patched and overlaid by a heavy coat of clay perhaps intended to serve as foundation for a bitumen floor like that north-west of the stairs, is the work of Ur-Nammu, and it continues back under the salient wall; the real frontage of the Third Dynasty second stage was continuous, and we have it preserved on the north-west side of the central stairs behind the stair-head underneath the second stage wall of Nabonidus at that point. We have it also at the east corner, where it is well preserved for a short distance, but here it is on a very different level. As will be described in detail later, both at the north-west and at the south-east ends of the Ziggurat the retaining-wall of the second stage is preserved together with the original brick pavement of the first stage extending outwards from the wall's foot, and the surface of that pavement is only 11·00 m. above the level of the Ziggurat terrace.[3] At the east corner the return of the south-east wall of the second (Third Dynasty) stage is preserved for a distance of 5·00 m. along the north-east front, after which it breaks away; but it lies at the same low level of 11·00 m. On the north-east front of the Ziggurat, therefore, the stair-head, together with a wide stretch of pavement on either side of it, is 3·20 m. above the level of the pavement at either end of the building; it follows that there must have been a ramp or staircase connecting the two levels.

From the east corner the north-east wall of the second stage runs at low

[1] Length 0·40 m., arc bases 0·39 m. and 0·32 m., and 0·29 m. and 0·22 m.

[2] For a parallel see the case of the cones of Sin-balatsu-iqbi in the Kuri-Galzu well, p. 33.

[3] There is a difference between the two ends of a few centimetres, which can be neglected as probably due to sinkage or to irregularity in the original building.

level for 5·00 m.; had it ever run any farther it would be hard to account for its total disappearance, since the continuation would have been less exposed to damage than the initial stretch which actually survives. The obvious explanation is that it never ran farther, but from this point was stepped up with the rise of the stairs built against its face, for the mud-brick foundation of the steps would have been one with the mud-brick core of the second terrace. Since the high-level pavement is preserved for a distance of 8·00 m. south-east of the central stairs, the head of the steps[1] must have come at least as far as this from the centre, and if the gradient was similar to that of the upper central flight the foot of the steps would have come close to the angle of the second stage, which would agree with the stepping-up of the foundations of the second stage wall at 5·00 m. from that angle. From the point where the high pavement breaks away to the east corner of the Ziggurat everything had been destroyed down to a level at which no burnt-brick remains could be expected; but in the rubbish heaped against the balustrade-wall of the south-east flight of stairs, immediately below the spot where the supposed steps would have been, and lying high up in the rubbish so that it must have fallen relatively lately and have come from high up in the building, we found a huge, solid block of Ur-Nammu brickwork (the bricks still held together by the bitumen mortar) of which one side was originally stepped. It had not come from the main south-east flight of the central stairs, and it was quite possible that it was a fragment of the smaller flight which connected stair-head with the level of the wide platform at the south-east end of the Ziggurat. The reconstruction of such a flight of steps is absolutely required by the plan of the building with its diverse levels, and its position south-east of the central stairs can be fixed with tolerable accuracy: considering the general symmetry of the Ziggurat we can safely restore a corresponding flight on the north-west side of the centre, even though there was there no material evidence (see Pl. 84).

The somewhat complicated arrangement of the elements of the façade of the Ziggurat was enforced by material considerations. The set-back of the second stage of the building does not give sufficient horizontal space for a stairway connecting the two levels; consequently, if the converging flights of stairs from the terrace had attained only the height of the first stage it would have been impossible to reach the second stage by a continuation of the central flight; to achieve that, the landing of the gate-tower had to be higher than the pavement of the first stage. That it should be higher was justified, architecturally, by the fact that the gate-tower is outside the line of the Ziggurat frontage, and as the central feature it gains greatly in emphasis by being thus detached from the building and differentiated from its main horizontal lines, while it is further thrown into relief by the sloped balustrades of the side stairs connecting the first and the second stages; at the same time the slope of those stairs, running at a rather sharper angle than the north-west and south-east flights of the great staircase below, joins with

[1] A ramp would be unlikely in any case, as there is no precedent for such elsewhere in the building; and here the space available would give too sharp a gradient for anything but steps.

them to carry the eye upwards and inwards to the central shrine that crowned the Ziggurat.

It has been pointed out that the north-east front of the gate-tower is dignified by greater width than the back and that it rests not on the stair-head, but on buttresses which stand on the bastions occupying the angles of the three main stairways. The bastions were covered with a solid pavement of burnt brick, preserved in the inner corners, whose top was 8·30 m. above ground-level; the pavement must have sloped slightly to allow of drainage, and surface water was carried off by the vertical drain-shafts in the side of each. Seeing that the line of the stairs, which cut across them, was unbroken, access to the top of the bastion was difficult—the architect would never have planned a doorway through the parapet wall with steps across its threshold—and probably there was no access; the bastions were structurally necessary both for the support of the central staircase in its highest part and as a base for the buttresses or piers on which rested the gate-tower, and aesthetically also they were essential; there is no reason to suppose that they served any other purpose.

On the north-west side of the Ziggurat we made, in 1932, a deep cut in the centre, where an old breach had destroyed Nabonidus' terrace wall and much of the retaining-wall of the Third Dynasty lowest stage (Pl. 40 *b*). At 2·35 m. below the Nabonidus pavement-foundations, i.e. 3·00 m. below his floor-level, we found the pavement of the Ur-Nammu terrace, formed of burnt bricks 0·29–0·30 m. sq., covered by a thick layer of bitumen which ran back to the contemporary wall of the upper stage, here preserved to a height of 1·30 m.; the exact height of the pavement above ground-level was 10·80 m. The wall had the usual batter and shallow buttresses; it was followed by us towards the north-east, but broke away before the north corner (Pl. 83 *b*).

On the south-east side of the Ziggurat the wall of Ur-Nammu's upper stage was exposed by us for the greater part of its length, from the east corner for a distance of 17·00 m. and again for 2·00 m. at the south corner, with an interval between the two stretches of 14·00 m. which could not have been cleared without destroying evidence valuable for the understanding of the Nabonidus period. The wall is of burnt brick (bricks 0·30 m. × 0·29 m. or 0·30 m. sq. × 0·055–0·060 m., with half-bricks to secure bond 0·30 m. × 0·14 m. × 0·055–0·060 m.) and stamped bricks are frequent in it; it is relieved by shallow buttresses 1·60 m. wide and 0·15 m. deep at intervals of *c.* 2·40 m.; it is 1·15 m. thick and at the back are projections of burnt brickwork keying it into the filling of mud brick, a solid core of bricks 0·25 m. × 0·16 m. × 0·08 m., grey in colour and set in grey mud mortar without any matting between the courses. The pavement is bonded into the wall, its brickwork and the wall-foundations being continuous; the maximum height of the standing wall above the (Ur-Nammu) pavement-level is 1·40 m.; the pavement consists of ten courses of burnt bricks set in bitumen and thickly plastered over with bitumen; it lies 11·00 m. above the Ziggurat terrace (Pl. 59).

The two ends of the Ziggurat at this stage were symmetrical in that the front line of the upper stage was in each case *c.* 11·50 m. behind the outer face of the containing-wall of the lowest story; but the symmetry was so far as we know incomplete, for on the south-east side part of the wall of the second stage was hidden, and there stood against it buildings which projected for about 4·00 m. and reduced by that amount the open space between the second stage wall and the edge of the Ziggurat. From the second buttress from the east corner there runs out a wall, now standing one and a half courses above the pavement; the face is preserved only on the inside (south-west) and a good pavement runs up to and ends at it; from it a return ran south-west, as is shown by the bitumen coating of the bricks; the wall bricks have gone, but their impression on the bitumen remains. This wall, which rests on the pavement and is not bonded into the terrace wall, yields no brick-stamps; the measurements are not inconsistent with the Third Dynasty, but the colour and texture of the bricks resembles rather that of Sin-idinnam; it may not, therefore, be an original feature. But against the third buttress, there is a wall running north-west by south-east which is certainly a wall of Ur-Nammu. It is not bonded into the terrace wall, and to that extent would seem to have been an afterthought, but it is bonded into the brick-work of the paving, which proves it to be part of the original construction. At a metre's distance from the terrace the wall came to a clean end with a reveal in its outer (east) angle, showing that there was here a doorway with a door opening on the outside; the continuation of the wall was lost, its foundations being indistinguishable from those of the pavement of which the surface had been removed, but its original length and the position of the south-east wall of the chamber could be determined by the order of the bricks at the broken edge of the brickwork mass.

Against its inner face, in the east corner of the room, there was a semi-circular hole in the pavement which was perhaps designed to take a door-socket; the fact that it is cut down into the brickwork of the pavement instead of being built means that it is an afterthought; as it is not very deep, it may have been made at a later period after the raising of the floor-level, but even so it witnesses to the presence of a door here and to the width of the door-opening. The south-west wall of the chamber was preserved at its north-west end (Pl. 60) to the height of the wall of the second stage on which it abutted; it was not bonded into that wall, and up to 0·50 m. above floor-level is separated from it by a gap 0·35 m. wide, above which the bricks come up against the wall-face; the three lowest bricks above the gap are not bonded into either side; they must have rested on something which filled the gap below them and has since disappeared, presumably therefore on wood. The wall is of normal Ur-Nammu bricks, 0·30 m. sq., some of them stamped. It will be seen on the ground-plan that the chamber is exactly central to the south-east face of the Ziggurat; if the chamber with the ruined wall lying to the north-east of it were contemporary with it, this centralization would of course be lost, but if, as is probable on other grounds, that second chamber is of later than Third Dynasty date, then it holds

good and the Ziggurat as seen from the south-east is symmetrical. Whether it was so as seen from the north-east or south-west also we do not know. We did not discover any trace of a similar annexe against the face of the wall of the second stage on the north-west side of the building, but here our investigations could not be conducted over a wide area without destroying the whole of the existing Nabonidus superstructure, and the central space actually cleared was too small for the negative evidence it yielded to be final. In the isometric drawing of the restored Ziggurat on Pl. 86 I have not ventured to insert such a chamber, but perhaps the general harmony of the building might be held to justify the inclusion of a feature for which no material evidence has been found.

That a particular sanctity attached to the chamber was evident. At some time in the Larsa period when repairs of the Ziggurat were undertaken the chamber was repaved; over the bitumen surface was spread a layer 0·25 m. thick of earth, ashes, &c., and over it a single layer of bricks, burnt bricks of various types (0·32 m. sq., 0·32 m. ×0·16 m., 0·30 m. ×0·15 m., 0·28 m. sq., 0·28 m. ×0·14 m.), many of them broken, laid in a rough patchwork, presumably as foundation for a clay floor: in the bed of earth and ashes there were strewn quantities of very small copper objects, chiefly crescent moons about two centimetres across, but also model boats, scarcely larger, model flies (?), and a pin, U. 17945, undoubtedly a deposit placed here for the sanctification of the room (Pl. 60).

On the south-west side of the Ziggurat the upper terrace wall could not be followed without wholesale destruction of the later work; its south corner was found, which sufficed to give its line; its west angle had been destroyed by the denudation of that corner of the Ziggurat; the terrace came so close to the south-west edge of the Ziggurat that there was no room for any excrescence such as the chamber on the south-east side; as in the later period, it must have been a straight wall relieved only by the normal buttresses.

A considerable patch of burnt-brick paving survived farther to the south-west, in front of the south corner of the upper terrace; it projected nearly six metres from the wall-face and its lower courses seem to be stepped down as it approaches a rectangular block of brickwork close to the terrace edge (see p. 119). This particular piece of pavement is remarkable for its lavish use of bitumen; on the north-east side, where the surface is preserved, there is spread over it a layer 0·20 m. thick, and where the burnt brickwork breaks away it is found to rest on a bed of bitumen 0·18 m. thick. In level the pavement agrees with that against the foot of the upper terrace wall, and stamps of Ur-Nammu were found in it; both it and the rectangular brick block beyond were buried under the grey mud brick of Nabonidus.

I have now described all that remains visible, on each of its four sides, of the retaining-wall of Ur-Nammu's second stage; it encloses a mud-brick platform measuring over all 36·00 m. north-west by south-east and 26·00 m. north-east by south-west; where it is best preserved, on the north-west, the south-east, and in the middle of the north-east sides, it is standing to an approximately uniform height of 1·40 m.

This uniformity, however, does not help us to estimate the original height of the story; it is due simply to the fact that Nabonidus' workmen, in order to lay their foundations, levelled the ruins as far as was possible. This was systematically done. On the south-east side the core composed of Ur-Nammu's grey mud bricks had been shaved down flush with the top of the burnt brickwork, which had itself been levelled in stretches (in the bitumen mortar over the top course could be seen the imprint of the missing course above), and over the top of both alike had been put a layer of reed mats and bitumen about a centimetre thick which served as bedding for the new mud-brick core (Pl. 63 *a*); this layer projected beyond the wall-face. At the south corner a layer of very hard, dark-coloured cement covered the Ur-Nammu brickwork and on the top of this came the layer of reeds, reed matting, and bitumen: it was subsequently discovered that the cement layer dated to the time of Ur-Nammu, and it is clear that the Neo-Babylonian workmen, finding a hard and level surface, were content to utilize it. On the north-east side precisely the same layer of reeds, reed matting, and bitumen is laid directly on the Ur-Nammu grey mud brick and is flush with the top of the containing-wall, but does not come over the top of it; in this part the wall was to be used as a foundation for the Nabonidus burnt brickwork which followed on the same lines, and since the old and the new were to form a single wall, no intermediate course of matting, &c., could be allowed; but both the burnt-brick wall and the mud-brick core behind it were trimmed down to the same general level and for the new mud-brick core the same bedding was laid. This being the case, the actual height of the containing-wall to-day cannot of itself be reckoned as evidence for the original height of the platform; that can be calculated, if at all, only by considerations which will be detailed later.

Starting in the exact middle of the south-east wall, a trench was cut by us through the heart of the Nabonidus mud-brick core in a straight line north-west towards the centre of the Ziggurat. In order that no evidence might be missed we took as the bottom of our trench the layer of reeds and bitumen whereon rested the unmistakable large, light red Neo-Babylonian mud bricks; when the black bitumen layer had been exposed it was removed and the grey bricks below were followed up, the two top courses being lifted in order that measurements might be tested throughout and the uniform character of the work proved (Pl. 63).

Where our trench was made there was at a distance of 1·15 m. back from the face of the containing-wall a rise in level of 0·13 m., the Neo-Babylonian builders having left here an extra course of Ur-Nammu mud bricks; the bitumen layer was carried over this and ran unbroken for a total distance of 8·80 m., when it ended against the sloping face of a mud-brick wall, standing at this point 1·95 m. high.

The battered mud-brick wall was followed in both directions to its corners and was found to have a total length of 11·10 m.; the top was level, or nearly so, all the way along, but this must be attributed to the levelling done by Nabonidus. The slope of the wall-face corresponded to that of the main

wall of the Ziggurat; the face was mud-plastered; the bricks were the normal Ur-Nammu mud bricks, 0·25 m. ×0·16 m. ×0·07–0·08 m.; there could be no doubt about its being part of the original structure. There could also be no doubt that it represented the third story of Ur-Nammu's Ziggurat. To test this a cut was made in the grey brickwork in front of the battered wall and it was found that nowhere, owing to the bonding of the brick courses, could there be made a sloping and regular face such as the wall presented; the possibility that Nabonidus' workmen had trimmed down the edges of the ancient mud-brick core and economized labour by leaving the middle, which would naturally have been the highest part of the ruin, standing to a greater height with straight sides accidentally produced by the removal of the surrounding material, was therefore eliminated.

The face of the wall was covered with a mud plaster containing a very large proportion of chopped straw; it was very rough, and not only was the plaster not brought to a smooth finish but such was impossible, for the wall itself bulged and necessarily produced a lumpy and uneven surface. This we found was due to the character of the bricklaying; four courses of bricks laid horizontally were succeeded by one course of bricks standing on edge with their broad faces to the front; then came a course of bricks standing on edge but with their narrow edges to the front, a second course of standing bricks face outwards and a second course of standing bricks placed edge-wise, then four horizontal courses and again a repetition of the standing bricks; the sketch in Fig. 10 makes the arrangement plain. Obviously with such a method of bricklaying—which is identical with that employed in the core of the second story of the Ziggurat, but there the bond between courses is not the same—each course must present a vertical face to the outside and the only way in which a sloping wall-face can be produced is by the setting-back of the successive courses, which in this case was actually done. But as sun-dried bricks are seldom very regular in shape bricklaying as complicated as this was difficult and the bricks, especially those set on edge with the broad faces outwards, would seldom accommodate themselves neatly to a regular plane; these were meant to be sloped backwards, but they were often crooked, and the general result was a roughness which even the plaster could not conceal.

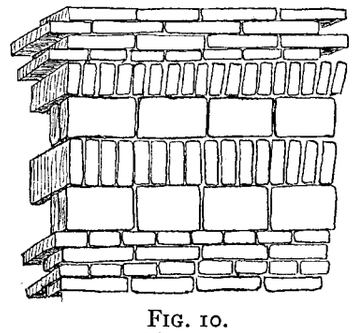

FIG. 10.

The bricks (0·25 m. ×0·16 m. ×0·07 m.) were of the usual grey colour and the mud mortar also was grey; it was quite unlike the plaster on the wall's surface in that it had not the same admixture of chopped straw. The plaster was unlike that used on the surface of the Ur-Nammu sloped and buttressed wall of the Ziggurat terrace (see Pl. 15), but was very much like that used by Nabonidus for plastering the key-recesses in the upper part of his own Ziggurat. It did not go down below the layer of Nabonidus' matting and bitumen. Digging at the foot of the wall we found that the sloped face

went down below the layer of matting and bitumen laid by Nabonidus to a depth of two courses of the Ur-Nammu brickwork; then there was in front of it a layer *c.* 0·15 m. thick of extraordinarily hard cement[1] which underlay the sloped wall and extended outwards from it for a distance of 1·10 m.; below this the mud brick continued, but it was now uniform, there was no sloped face and nothing to distinguish the third story from the second. Ur-Nammu's workmen had carried their brickwork consistently over the whole area of the upper Ziggurat terrace; then, at this level, the future third story had been plotted out and its construction started; a layer of cement had been spread over the middle of the platform, covering the rectangular space designed for the third story together with a liberal margin round it, and bricks for the third story had been laid on this bedding; then, when the work had gone a little way, the level of the second terrace had been raised to the required level by laying fresh courses of brick round the rising central tower.

The fact that the plaster does not go down below the bitumen layer of Nabonidus whereas the wall-face does would seem to show that the plaster was applied by Nabonidus, as its character also suggests: but it is not a repair of the old work; it is the only plaster ever applied to the wall and there is no other coat beneath it. The plaster shows no signs of weathering, and when it was removed by us it was found that the bricks below it were also in perfectly good condition; they had not been exposed to rain and wind for any length of time, and they cannot, therefore, have formed the face of the Ur-Nammu Ziggurat stage. It is, indeed, inconceivable that any one should have attempted to build a wall-face with bricks laid as these are laid; not only is it impossible to obtain a regular surface, but the pressure from above would certainly force out of place the bricks set on edge with the broad faces to the front (the tendency to thrust is manifest as it is). This is essentially an interior packing such as would be laid inside a retaining-wall —not built first and then surrounded by a casing, but following on the construction of the casing, so that only when a new course had been added to that would a new course of the filling bring the inside up to its level. It is manifest that what we have left here is the core of Ur-Nammu's third story from which the casing has been removed, presumably by the workmen of Nabonidus. If the construction of Ur-Nammu's third story was similar in character to that of the second, which we can reasonably assume to have been the case, then the brick core which is all that we have of the third story was enclosed by a burnt-brick wall 1·15 m. thick, and at the foot of this stretched a terrace floor composed of ten courses of burnt bricks laid in bitumen. All this has been removed (by Nabonidus ?). In what remains of the Neo-Babylonian building, especially in the heavy pavement at the south-east end of the first terrace, old Third Dynasty bricks are freely re-used; these could not have been lying about loose when the rebuilding

[1] The cement was like that found in the south corner of the second terrace, where, however, it occurred between courses of late brickwork, see p. 123. It was so hard that our men using heavy picks had the greatest difficulty in cutting into it.

started, but must have been obtained by the demolition of standing walls or existing pavements of Ur-Nammu's time. Since the building-plan of Nabonidus involved the burying in the heart of his Ziggurat of all that remained of the upper stages of Ur-Nammu's work, the stripping of the burnt bricks, which could be re-used, was an obvious economy, and on the whole it was systematically done, only the lowest courses of the containing-wall of the second terrace being left really as a foundation of the new walls whose line overlaps it. The question that then poses itself is whether Nabonidus' workmen did more than this; did they simply remove the burnt-brick casing of the third story, leaving its mud-brick core intact, so that by restoring the casing we could obtain an accurate reconstruction of the Third Dynasty Ziggurat, or did they also remove the upper layers of mud bricks? If we had to rely solely upon the evidence detailed thus far we might take it as showing that when Ur-Nammu's builders had brought the filling of the second stage to a level and, having spread their layer of cement over its brickwork, proceeded to the erection of the third stage, they duly laid two courses of mud bricks as a guide to its outline, then laid thereon the first courses of the burnt-brick enclosing-wall and subsequently laid round it, over the whole platform of the second stage, two more courses of mud brick which should serve as a foundation for the burnt-brick pavement. The next phase would have come in the Neo-Babylonian period when Nabonidus' workmen removed the burnt-brick casing of Ur-Nammu, piously—or with the practical purpose of making a closer joint—plastered the exposed mud-brick core of the old building (which they certainly did, whatever their motive), and laid their own bricks against its plastered face; it would therefore follow that the ruins existing to-day would preserve almost intact the structure of the Third Dynasty Ziggurat. Against such a conclusion there are, however, fatal objections.

In the first place, the existing top of the second terrace is only 1·50 m. above the pavement of the first; if to this be added 0·85 m. to represent ten courses of burnt-brick pavement, it gives only 2·35 m. for the total height of the terrace. Now on the north-east side of the Ziggurat the landing at the top of the flight of steps going up through the south-west door of the gate-tower, and the paved passage on either side of it, lie 3·20 m. above the level of the first terrace at the north-west and south-east ends of the building, and that this is not yet the level of the second terrace is proved by the existence of the wall running along this side; starting from the high-level pavement the wall contains a platform which was obviously higher still. Again, beyond this landing are the remains of a further flight of steps which might indeed cut across part of the upper terrace, but must have afforded access to it, i.e. there must have been at their head a landing on the level of the second terrace, after which the stairs would mount again to the top of the third terrace. Again, the supposition that the Neo-Babylonians simply removed the burnt-brick casing from Ur-Nammu's upper stages and left his mud-brick core intact would imply that they found the casing also virtually complete, which is highly improbable. A pavement of burnt brick

ten courses thick is certainly a solid, durable thing, but it is not immune from destruction; just as on the top of the first terrace Ur-Nammu's pavement is preserved only for a narrow strip at the foot of the second terrace wall and the greater part of it has disappeared with the collapse of the upper part of the retaining-wall of the Ziggurat, so on the second terrace Nabonidus' men must have found the pavement preserved only in a strip surrounding the wall of the third story and from its broken edge a slope of debris running down to what remained of the second story wall: they trimmed the top of that wall flat and then cleared back on its level till they came to the face of the third story foundations, which they decided to leave as a core for their own work. The amount which they cleared away bears no relation to the existing wall heights and brick levels; and we do not know enough of Third Dynasty building conventions to say at what vertical distance below the proposed pavement-level the builders of that date would begin to differentiate between the foundations of the pavement and the foundations of the third story building; we cannot, in other words, *ex hypothesi* calculate how many courses of mud brick they proposed to lay before construction in burnt brick should begin.

Only one end of the third stage was cleared, but assuming, as we safely can, that that stage was central to the Ziggurat, we have a rectangular mud-brick foundation measuring 20·00 m. north-west by south-east and 11·30 m. north-east by south-west. As the face of this mud-brick structure is strongly battered, its over-all dimensions are naturally reduced in proportion as it rises; it is only when the actual level of the second stage has been fixed that we can determine the exact measurements of the mud-brick core of the third stage, and from that level upwards we shall have to add the thickness of the burnt-brick casing, which on the analogy of the second stage we can put at 1·30 m.

The calculation of the height of the second story ought to be possible.

The three great converging staircases of the first stage are of very nearly the same gradient; taking the central flight, which is most to our purpose, we have a vertical rise of 12·00 m. in a horizontal distance of 28·00 m. At the top of that central flight there is under the gate-tower a landing 2·30 m. deep. From the beginning of the next short flight to the back of the gate-tower, where there comes the landing giving access to the paved area, is a horizontal distance of 3·00 m. and the rise of the stairs is 2·20 m. Here, then, the gradient is considerably steeper than in the case of the great monumental stairs; and it would be reasonable to assume that this was the norm for the upper flights in general. Such, indeed, seems to have been the case, for judging by the mud-brick foundations beyond the stair-head, i.e. by the inverted steps in the foundation of burnt brick whose upper surface has been shaved flat by the Neo-Babylonian builders, there then came a flat landing 2·00 m. deep, and thereafter steps giving a rise of 2·50 m. in the horizontal space of 3·40 m. for which the brickwork remains; this agrees with the gradient of the flight below; and if we prolong the stairs to the line of the back of the stage wall, a total distance, allowing for the wall's batter, of

5·00 m., we have a rise of 3·70 m. The landing so reached should be the top of the second stage, whose height accordingly would be 16·70 m. above ground-level and *c.* 5·70 m. above the pavement of the first stage on the north-west, south-east, and south-west sides of the Ziggurat.

Between this stair-head and the inner face of the casing-wall of the third story (i.e. the face of the existing mud-brick wall) there is an interval of 6·00 m. of which the first part would be a landing giving on the second terrace-level and the rest steps leading to the top of the third story; if the arrangement were the same here as on the stage below and the landing were 2·00 m. deep, there is left for the steps a horizontal distance of 4·00 m., which with the same gradient would give a rise of 2·90 m.; but it is, of course, possible that the stairway was cut back for some distance into the top terrace and that the height of the latter was greater in proportion. As regards the shrine which crowned the building nothing can be known for certain. If, like the shrine on the Babylon Ziggurat in the time of Herodotus, it consisted of a single chamber, its ground area need not have been large and it would be feasible for the steps to be carried back through the terrace to its entrance-door; the larger it was the less room there would be for the staircase and the lower, therefore, must have been the top story. Presumably it accorded with the form of its platform, being wider than it was deep; the entrance must have been in the north-east side facing the stair approach, and the façade must have been adorned with the grooved niches always found on sacred buildings; its height is a matter of pure conjecture, and so is the character of its roof, though it should be remarked that a domed roof would at this time have been quite possible in the case of a square building and that a corbelled vault would have analogies in the mausolea of the Third Dynasty kings.

The existing remains of the Third Dynasty Ziggurat, scanty as they at first sight appear, do, I think, constitute evidence for a reconstruction of the building which is gratifyingly accurate as regards its main lines. The exact measurements of the ground-plan of each stage are known; the height of the first terrace and of the higher platform at stair-head on the north-east front are fixed by the remains of the contemporary pavements, the height of the second terrace can be calculated by the stair lengths and gradients with but a small margin of possible error, and even the height of the missing top terrace can be judged within narrow limits. A point not cleared up by the excavations is the existence at the north-west end of the second terrace of a chamber corresponding to that at the south-east end; and the precise position of the steps leading down to that terrace from either end of the high north-east platform must also remain conjectural. We have nothing to show whether the tops of the walls, the parapets enclosing the terraces, were plain or decorated with stepped crenellations such as were already in use about the time of the Third Dynasty (a small clay model of a building dating from this or from the Larsa period, found at Ur, shows such crenellations); later buildings, such as the Nebuchadnezzar temple at Kish, show that the shallow recesses in the faces of the walls were finished above with

projecting brick courses flush with the buttress-fronts, and that does away with the need which would otherwise be felt to carry up the buttresses into some form of crenellation or battlement; in the reconstruction on Pl. 86 we have preferred to make the wall-tops plain. As regards the gate-tower, its relatively small size, square plan, and heavy corner buttresses lend colour to the idea that the door openings, like those in private houses, were arched, and that the roof was in the form of a dome; the only example we can quote of domical construction in the time of Ur-Nammu is the little water-cistern at the foot of the Ziggurat (p. 34), but as the form had been known since the days of the predynastic Royal Cemetery (vol. ii, p. 234), there is no anachronism involved in restoring it here; the alternative would, of course, be a flat roof of timber and matting and, probably, asphalt.

A problem is presented by the rectangular holes in the brickwork which are so noticeable on the exterior of the lower story. They are arranged in tiers, at regular intervals, and go not only through the burnt-brick casing but deep into the heart of the mud-brick core. They are normally interpreted as 'weeper-holes' intended to drain the interior. Such 'weeper-holes' are regularly made in modern revetments, e.g. of earth banks, since without them the revetment-wall would risk being burst by the weight of water collected behind and by the swelling of the damp soil; it is argued that in the case of the Ziggurat the rain falling on the upper terraces and soaking through into the mud-brick core would constitute a danger against which precautions were necessary. Other writers have suggested that they were intended to promote the drying of the mud-brick core at the time of construction by allowing air-passage to the interior of the mass.

Now in the normal way of building mud bricks when laid are absolutely dry—drier than kiln-fired bricks, which are often wetted to secure the better adhesion of the mortar; the mud mortar employed is fairly stiff, i.e. the proportion of water is not very great, and the amount used is not excessive; in the present building the bricks were certainly dry when laid (this can be told from their condition) and the layers of mortar between them are thin, and in ancient building no mortar is applied with the trowel to the sides of the bricks and there is, therefore, in the vertical joints no more than happened to trickle down of its own accord, which with fairly stiff mud means very little indeed. Building in Mesopotamia is done in the summer, and since the builders had a very large space to cover, each course in turn would be exposed quite long enough for most of the moisture in the mortar to be dried by the heat of the air; I am convinced that what moisture did remain in the mud-brick mass was not enough to constitute a danger to the building or to call for such elaborate precautions as the 'weeper-holes'. Nor was there necessarily any subsequent risk. Each stage of the Ziggurat was paved with burnt brick set in bitumen, and although winter rains may be heavy in southern Mesopotamia, ten courses of burnt bricks and bitumen liberally overlaid with a proofing of asphalt is an absolutely impermeable covering; if it was continuous the mud-brick core could not be affected by the most tropical downpour, and the analogy of the revetment to an earth bank is

quite beside the point.[1] The rain-water collected on the top of the Ziggurat —a considerable bulk, in view of the area of the building—did not sink in through the pavements, but was carried by their slope to the heads of the vertical drains which run down the north-west and south-east sides of the main building and down the sides of the bastions in the staircase angles; from the foot of each vertical drain a carefully constructed conduit took the water outside the limits of the Ziggurat terrace. The drains in the bastions are simple recesses contrived in the wall-face; those in the main building are much deeper, and while the sides of the recesses are for the first thirty centimetres or so from the wall-face smoothly finished, behind this they are of rough brickwork, and the back of the recess is of broken and projecting brick-ends; this cannot have been the case originally and the recess must have been lined with something which has disappeared; I was inclined to suggest terra-cotta ring pipes, but must admit that there is no trace of such left; if it was anything of the sort, its destruction has been so complete that it would seem to have been caused by treasure-seekers who imagined that the lined recess led to something of value. The other possibility is that the lining was of wood, the only material which will naturally perish and leave no evidence of itself at all. As a mere drain-lining wood does not seem probable, but there is a further suggestion, originally put forward by Mr. Sidney Smith, which would explain its use, namely, that the recesses on the main building served a double purpose and were not only drains but also water-hoists. Water would be required on the top of the Ziggurat, if only for the sacrifices, and there is literary evidence to show that mechanical means of securing it were used. There is even a material argument in favour of the suggestion. Close to the top of the drain-shaft on the south-east side there is a solid block two metres square of burnt bricks set in bitumen, the work of Ur-Nammu, embedded in the crude brickwork of the Ziggurat's core; it is not bonded into the wall behind which it stands, and it goes down for eight courses; it is, therefore, not remains of pavement, but a solid mass presumably intended as the support of a weighty object; that it should have been the base for a water-hoist is at least conceivable.

In a chamber built against the back of the Ziggurat by Nabonidus (p. 73) there was found, certainly *in situ*, a door-socket stone bearing an inscription (*Ur Texts*, vol. i, No. 187) which implies that the surroundings of the Ziggurat and therefore the Ziggurat itself were included in the term *giparu*; the *e-gipar* as a specific building restored by him would seem to be identical at least in meaning with the *gi(g)-par-ku* or temple of Nin-gal adjoining the Ziggurat terrace, but *giparu* would have a wider application.[2] Nabonidus'

[1] This is true so long as the building was in good repair; if the casing were damaged there would of course be real danger. Very much to the point here is Nebuchadnezzar's Borsippa inscription (translated by C. D. Gray in R. F. Harper's *Assyrian and Babylonian Literature*, New York, 1901): 'The temple tower of Borsippa which a former king had built... from time immemorable it had been in ruins, its drainage had been out of repair' (or, in Rawlinson's translation, 'they had not taken care of the exits of the waters'), 'rain and bad weather had disintegrated its unburned brickwork, the tile-work of its roof had become cracked' (Rawlinson, 'the casing of burnt bricks had bulged out') 'and the unburned brickwork of its interior was poured out into a mound; to rebuild it the great lord, Marduk, incited my heart.'

[2] On all this see *Ur Texts*, vol. i, No. 67, and the authorities there quoted.

work on the *giparu* was prefaced by the clearing away of the debris of trees and branches with which the site was encumbered; he further repaired the *dalbu* or water-wheel and built the house for the priestess his daughter 'beside E-gipar', where we found the ruins of it next to those of the Gig-par-ku. The *giparu* was not itself a building but, in Mr. Gadd's words, summing up the evidence, 'a certain area of the temple precincts, situated near the *ziggurat* (and possibly including it), which was planted with trees so as to form an overshadowed grove'. The first difficulty that occurs to one is this: we have excavated all round the Ziggurat and the whole area was thickly covered with buildings; nowhere in the precincts was there room for a sacred grove of trees.

Returning to the ruins of the Ziggurat of Ur-Nammu, it is to be noted that the 'weeper-holes' occur in rows of which the lowest is at 1·20 m. above ground-level and subsequent rows at intervals of 1·20 m. above each other. The wall of the second story, built with the same batter and the same buttresses as that of the first stage, stands to 1·40 m. and has no 'weeper-holes'. This fact finally disposes of the views that the holes were either to allow of the drying of the mud-brick core or to provide against the danger of rain-water soaking into the core, for either of these risks should apply equally to the two similarly constructed stages; the point seems to be that there was some feature on the lower stage requiring such precautions which did not exist on the upper. I would suggest that on the lower stage, between the chambers built against the walls of the second story and the terrace edge, the brick pavement was interrupted by an unpaved strip, or by holes, filled with soil in which trees were planted; this would explain the need of water in such quantities as to make a water-hoist an almost necessary convenience, and it would explain the 'weeper-holes'. The bulk of the rain-water falling on the roofs and pavements of the Ziggurat would make its way to the drain-heads and be carried safely clear of the building; but some of it, and always the water which the servants poured into the 'beds' for the nourishment of the trees, would percolate through the soil into the mud brickwork and would constitute a danger against which the 'weeper-holes' are the right precaution.

The idea that the sacred grove was on the Ziggurat itself is quite in keeping with the character of that monument. Essentially the Ziggurat is a 'High Place', and its function is to exalt the little shrine of Nannar which was the most holy in the city; there was kept the statue which every year was brought down and taken to its summer palace for the mystic marriage whereon depended the fertility of the land and the produce of the seasons. In a land such as southern Mesopotamia, subject to annual inundations, any building, important and intended to endure, had to be raised above the reach of the waters, and a platform of some sort was necessary. No doubt it was the common practice of the earliest inhabitants of the country that suggested the possibility of Ziggurat-building, but these enormous structures were not merely due to engineering precautions; if the sole idea was to raise the temple above the damp the Ziggurat is a ludicrous exaggeration. The method

employed is that of the primitive house-builder, but the idea of the building is the High Place. And the gods thus honoured were mountain gods; they are portrayed standing or seated on rocky heights, and one must suppose that their original temples were on natural High Places, on hill- or mountain-tops such as Nature has omitted to supply in the lower Euphrates Valley. As the names of ziggurats prove, at Ur these towering masses of brickwork were artificial mountains, recalling the real heights whereon the gods had been worshipped in their original home; that such should have been planted with trees is but carrying the basic idea of them to its logical conclusion.

CHAPTER XII

THE ZIGGURAT, FROM THE THIRD DYNASTY TO NABONIDUS

ACCORDING to the foundation-cylinders, the original Third Dynasty Ziggurat was the joint work of Ur-Nammu himself and his son Dungi; actually there were found no bricks bearing Dungi's stamp[1] and presumably his claims were endorsed only by the foundation-tablets discovered by Nabonidus. On the other hand, a brick bearing the normal stamp of Bur-Sin (the same as is used for the building of the Ziggurat at Eridu) was found loose in the rubbish high up on the south-east flight of stairs, and five similar bricks were found, also loose, in the rubbish against the south-west face of the Ziggurat, too high up for it to have come from any other building: it would, therefore, appear that Bur-Sin made certain additions to his grandfather's work of which these few bricks are the only surviving evidence.

Of the damage done to the Ziggurat by the Elamites when they overthrew the Third Dynasty of Ur we can judge by little more than the analogy of the other public buildings excavated; on the Ziggurat itself it is hard to say how much of the destruction of Ur-Nammu's building is due to them and how much to the effects of time or the work of restorers. That the fabric even of the main block suffered is shown by the fact that the containing-wall of the north-west staircase and the north-west wall of the buttress-bastion between it and the central flight have been refaced up to the height of 2·35 m. with bricks 0·27 m. long by 0·06 m.; the size of them proves that the repairs were done in the Larsa period, presumably in consequence of damage by the Elamites. Also on the south-west wall of the Ziggurat, low down towards the west corner, there is a patch of later brickwork let into the old face, and one brick bears the inscription of Bur-Sin—though this may be a re-used brick (Pl. 52 *a*). On the upper part of the building the evidence for work done between the time of the Third Dynasty and that of Nabonidus is confined to the south-east end of the terrace.

It has already been remarked that here the wall starting from the second buttress from the east corner (see p. 110) can on the ground of the type of bricks employed (0·32 m.–0·33 m. sq. × 0·07 m.) be assigned to the Larsa period and probably to the reign of Sin-idinnam; since there are no earlier wall-remains corresponding to it, the Larsa king would seem to have made a definite departure from the Ur-Nammu scheme, adding a second room to the central terrace chamber of the original. The brick and clay pavement of the old chamber, under which were found the small votive copper objects, was certainly of Larsa date and probably fell early in that period; other floors at higher levels were laid later. In the south-west wall of that chamber

[1] A broken brick of his found in the rubbish south-east of the central staircase need not have come from the Ziggurat at all.

repairs were obvious. The original wall had been destroyed to within 1·40 m. from the pavement, i.e. to the same height as the wall of the upper terrace from which it ran out (this may give us the measure of the Elamite destruction), and then its top has been trimmed to a slope and over it have been laid courses of Larsa bricks 0·32–0·33 m. sq. ×0·06–0·07 m. at a sharp slope such that, were the courses brought to a true end line, this would be at the angle of the Ziggurat face (Pl. 59); apparently the outer or south-east wall of the chamber was given the same batter as had the Ziggurat walls. To the south-west of this wall, close to the south corner of the upper terrace, a pavement of Larsa burnt bricks 0·26 m. ×0·17 m. ×0·075 m. covered with bitumen lay at the height of two brick courses above that of Ur-Nammu (but so little of it remained that it was impossible to decide whether it was really pavement or relics of wall foundation); to the south-west of it, in front of the corner, was another patch of pavement made of broken bricks of Larsa type thickly overlaid with bitumen, 0·25 m. above the Third Dynasty level (Pl. 56). At 0·85 m. above that level there was a layer of astonishingly hard cement laid over a basis of mud bricks 0·32 m. ×0·27 m. ×0·10 m., and above this again was a second cement layer supporting a pavement made of mixed bricks (0·33 m. sq., 0·26 m. ×0·17 m. and 0·255 m. sq.), giving a level 1·45 m. above that of the Third Dynasty. The cement in each case was made with finely crushed brick, bitumen, and lime. Beyond the patch of brick paving the upper cement layer ran on and the mud bricks of Nabonidus' Ziggurat core (0·29–0·30 m. sq. ×0·14–0·15 m.) rested directly on it. In front of the east corner of the second story, again on the south-east side, two or three courses of burnt brick have been laid above the Ur-Nammu pavement to raise its level, these also being Larsa bricks; they fill the space between the corner and second buttress and run up to the outer wall of the new terrace chamber; any higher floors that may have existed here have been destroyed by the greater denudation of this part of the Ziggurat summit. Inside the outer chamber the Larsa floor is two courses above the old and there is a later floor of broken bricks above that.

At the north-west end of the Ziggurat, at the top of the first stage, the mud-brick foundations of the Nabonidus pavement rested on a layer of rubble 0·40 m. thick consisting of broken bricks, fragments of bitumen, &c., the bricks being of the light-coloured Larsa type 0·27 m. in length; below this come mud bricks measuring 0·29 m. sq. ×0·09–0·11 m. which are evidently again the foundation of a pavement and rest on the burnt-brick pavement of Ur-Nammu; under the Nabonidus terrace wall come mud bricks 0·29 m. sq. which are Neo-Babylonian and are the wall foundation, and to lay them the earlier mud bricks in front of Ur-Nammu's terrace wall have been cut away. It is clear that the Larsa builders laid their mud bricks over the Third Dynasty pavement to raise its level, carrying them back to the terrace wall which they were re-using; at the time of the Nabonidus rebuilding the rubble overlying the Larsa floor was levelled (and probably later remains were removed) and a trench was cut against the old wall-face to take the new wall foundations; when these had been built up to the top

of the rubbish layer the foundations for the new pavement were laid over it and bonded into the wall foundations so as to form a homogeneous whole; that in spite of similar measurements the lower bricks are not of Neo-Babylonian date is certain, and the character of the rubble overlying them makes it tolerably certain that they belong to the Larsa period.

From such very scanty remains little can be deduced. It is clear that Ur-Nammu's Ziggurat had suffered very severely and that the wall of the second story had been ruined down fairly low and the walls of the chamber abutting on it had met the same fate; these were repaired by the Larsa kings, though all that remains of their construction is five courses of burnt brick-work on the top of one chamber wall. On various occasions they had to make good the floors of terrace and chambers, but the rise in the level of these and the building of the second terrace room constitute the only changes that we are able to see in the building as designed by Ur-Nammu; if there were more radical reconstructions there is no trace of them left. So far as the surviving fragments of post-Third Dynasty work can be even problematically identified, they belong to the Larsa period; the long Kassite age including the reign of that active builder Kuri-Galzu is represented only by a stamped brick of Kuri-Galzu (*Ur Texts*, vol. i, p. 155) found loose in the rubbish in front of the stairway bastion. At the foot of the Ziggurat, against the balustrade wall of the south-east staircase, towards the angle which it makes with the bastion (Pl. 46 *a*), remains of paving, 0·35 m. above the original level, carried out with bricks bearing the stamp of Adad-apal-iddinam (1070 B.C.) suggest that something may then have been done to the Ziggurat itself; but that is the only dated evidence for repairs which we find prior to the time when Nabonidus turned the old building to his own purpose.

CHAPTER XIII

THE ZIGGURAT OF NABONIDUS

(*a*) THE EXISTING RUINS

IN the sixth century B.C. the lowest stage of Ur-Nammu's Ziggurat was still standing tolerably well preserved in spite of its age of seventeen centuries and of the vicissitudes through which it had passed. The Neo-Babylonian king proceeded to utilize this, but he cannot be said to have restored it, for his work was on a wholly different plan. In his foundation-cylinders Nabonidus states that the original Ziggurat was built by Ur-Nammu and his son Dungi and by them left unfinished. There is nothing in the ruins to confirm this statement, which can scarcely have been supported by any written evidence found in the ruins, and it is inherently improbable; the work was, as we know and as Nabonidus says, started in the time of Ur-Nammu, and the brick-inscriptions show that in his time the construction had gone very far; granted that he died before it was complete, Dungi had a prosperous reign of fifty and more years wherein to finish the building of the principal temple of the capital of his empire, and it is inconceivable that he should not have done so: if the Neo-Babylonian's statement means anything it must mean that the Third Dynasty kings did not complete their monument according to his conception of what a ziggurat should be.

The containing-walls of the existing Ziggurat are, as has been seen, the work of Ur-Nammu throughout; what Nabonidus had to do was to make good the stairways, and this he did by laying new treads about 1·00 m. above the old and repairing and raising in proportion the balustrade walls of the staircases. The raising of the level of the stair-foot was occasioned by, or necessitated, a raising of the level of the Ziggurat terrace. Here no pavement of the Neo-Babylonian period survives, and indeed none existed; the floor was of clay only, but its level is exactly given first by the existence of a low square brick altar in front of the foot of the central stair-flight and secondly by the fact that in this age the whole wall of the Ziggurat was painted black with bitumen;[1] the colour stops at 1·35 m. above the stepped-out foundation of Ur-Nammu's building and the paint, running down the wall-face to which it had been liberally applied, is found spreading out over the clay floor. The uniform raising of the stairway implied the raising of the landing on which the stairs converged; this has disappeared together with the upper treads of all flights, but apparently it was flush with the terrace-passage at the back of the gate-tower and therefore the flight of steps which in the old

[1] Naturally, most of the bitumen has been weathered away; it is preserved for the most part from the Neo-Babylonian floor-level to the point where it was protected by the rubbish heaped against the wall after the earliest destruction of the monument. Where the Ziggurat wall was masked, e.g. in the angle between the central and the north-west flight of stairs where was the temple (see p. 69), the wall seems not to have been painted; incidentally, most of the balustrade here was new brickwork, see p. 101.

Ziggurat occupied the back part of the tower was eliminated in the new. The ground-plan, Pl. 79, will show to what extent the stair-head had been destroyed, partly by Taylor's great trench; all the Neo-Babylonian work here had gone and it was impossible to prove that Nabonidus had followed Ur-Nammu's arrangement of a gate-tower; but though no later brickwork is found on the stumps of the Third Dynasty piers, the piers remain and were perforce utilized; it is difficult to see how they could have been used except for the purpose for which they were designed.

The distinction between the work of Nabonidus and that of Ur-Nammu is easily made even where the brick-stamps are not found—indeed, the latter may be misleading, for the Neo-Babylonian builders used freely old bricks procured by the demolition of the Third Dynasty superstructure. Nabonidus used a distinctly larger brick, measuring 0·31 m. sq. ×0·09 m. as against the 0·29–0·30 m. sq. ×0·07–0·08 m. of Ur-Nammu; the bricks are of poorer quality and in many cases have powdered owing to the action of salt so as to leave gaps in the face of the building; actually the balustrade walls built largely by Nabonidus present a much more ruinous appearance than do Ur-Nammu's walls of the Ziggurat proper (Pl. 42). The bitumen is also poor in quality, and, as has been remarked, tends to be replaced by mud mortar in places. On the upper story there is occasional use of cement mortar instead of bitumen. Nabonidus' mud bricks measure on the average 0·29 m. sq. ×0·14 m.; they are laid in mud mortar with layers of matting between the courses: on the subject of these bricks more will be said hereafter.

It is clear that up to the level of the top of the first stage Nabonidus preserved the old character of the building, simply making good what had suffered from the effects of time; but once arrived at that level he started on a scheme of his own, and the lines of his building have nothing at all in common with the ground-plan of Ur-Nammu. A description of what has actually been found here must be given in detail before any theories of reconstruction can be attempted.

On either side of the trench left by Taylor running from stair-head into the heart of the upper stages of the Ziggurat there are the remains of the solid mass of burnt brickwork of Ur-Nammu which was the further flight of steps leading to the second terrace; the top of it (see the sections, Pls. 80 and 82) is shaved flat by the workmen of Nabonidus and carries on the level of the stair-head platform ruins. On the line of the trench itself nothing survives, but at the sides we find, beyond this mass, and rising well above it, the wall which was the façade of Ur-Nammu's second stage rebuilt by Nabonidus, whose stamped bricks occur freely in the upper part of the wall. To the north-west of the stair (Pl. 53 *b*) the wall continues for a distance of about 8·00 m., its face vertical, with no batter, and unrelieved by buttresses, the brickwork of it mostly of Neo-Babylonian date; in front of it stretches the solid brick pavement of Ur-Nammu, its surface patched or overlaid by Nabonidus bricks and liberally coated with bitumen. Then comes a salient from the wall-line formed by a small staircase built against the wall-face and

running up from south-east to north-west; the stairs are 1·10 m. wide and with the balustrade wall give a total projection of 1·70 m., but this balustrade wall, which has a vertical face, at a distance of 2·40 m. from its start is relieved by a buttress 3·50 m. wide; at 2·35 m. from the end of the buttress the wall is broken away. Of the treads, ten are preserved, each with a rise of 0·20 m. and a depth of 0·34 m.; the gradient is therefore a steep one of 10 in 17. All the staircase, treads and balustrade wall, is the work of Nabonidus. Behind the first stretch of straight wall and behind the continuation of it which forms the inner side of the staircase comes the filling of large grey mud bricks; the wall itself is only 0·90 m. thick, unusually thin for a retaining-wall. Like the outer balustrade wall this inner wall breaks off before the north corner of the building is reached, and even the mud-brick filling behind it is completely ruined away.

To the south-east of the central stair-head a fragment of the same inner retaining-wall is preserved, the majority of its bricks being those of Nabonidus, though these rest on the work of Ur-Nammu; then the line runs outwards, and turning again to the south-east can be traced for a distance of nearly 11·00 m.; here the wall-face is battered and relieved by buttresses, of which that of the corner is 4·00 m. wide, 3·65 m. apart; it should, therefore, correspond to the balustrade wall of the staircase salient on the north-west side of the centre, but is in fact not strictly alined with it; the wall-face between the buttresses alines with the buttress-front on the other side and its buttresses therefore project beyond it. This wall is 1·75 m. thick; the bricks used are exclusively those of Nabonidus. In front of it is the Ur-Nammu pavement described in the previous part of this report, but here, too, there has been late patching and in the top two courses are Nabonidus paving-bricks with bitumen above; this late floor-level was preserved only as far as the angle of the second buttress, and it did not extend far from the wall-face, the brickwork (of Nabonidus above and Ur-Nammu below) being gradually stepped down to the broken top of the Ziggurat wall. The back of the wall is rough and against it comes the mud-brick filling; after the point at which the wall is broken away the filling behind it continues and is found to run over the top of the ruined terrace wall of Ur-Nammu, and filling-bricks are still in position in front of this; therefore the late wall did not fall back here to the old line, but continued its course, presumably to the east corner of the building. Unfortunately the east corner has completely disappeared.

On the north-west side of the Ziggurat the upper terrace wall is preserved as regards its front face for about 13·00 m. and at its back for 18·00 m.; it is of burnt brick, 1·80 m. thick with a vertical face relieved by shallow buttresses 3·50 m. wide and 2·80 m. apart, corresponding, therefore, to those on the balustrade wall of the small north-east staircase; the face of the wall is preserved to a height of 0·80 m. only, but from this the brickwork shelves back to a very level top about half as wide as the wall and 1·50 m. high. In front of the wall are remains of the terrace floor, layers of burnt bricks totalling 0·65 m. thick resting on a foundation 1·30 m. deep of grey mud bricks 0·28–0·30 m. sq. ×0·14 m., the bottom of which was separated by a

rubbish layer 0·40 m. thick from the Ur-Nammu pavement beneath. The mud brickwork was carried back to the face of the Third Dynasty terrace wall and went deeper at the back for a width of 1·15 m. to the Third Dynasty pavement-level, so as to give a solid footing to the Neo-Babylonian terrace wall, and the burnt brickwork of the pavement was constructionally one with that of the wall-front (see the section, Pl. 80). The pavement was 13·00 m. above the (new) ground-level at the foot of the Ziggurat and was, therefore, within a few centimetres of the level of the Nabonidus pavements on the north-east side of the Ziggurat (Pls. 61, 62 *a*).

From the top of the burnt brickwork, on its back line, there rises to a height of about a metre the straight face of the mass of red mud brick which forms the whole of the existing upper part of the ruin (Pl. 62 *a*). The grey brick of the wall foundations was, behind the wall, carried up for three courses above the level of the lowest course of burnt brick in the wall itself, and the red mud brick rested on these. The face is smooth, regular, and has been thickly plastered with a plaster of red mud similar in character to that of which the bricks are made; at intervals of 4·00 m. there are in it rectangular recesses about 0·85 m. across and a metre deep; the sides of these seem to have been plastered with the same red mud, and they were filled with rough brickwork containing broken bricks all of the Nabonidus type and sometimes bearing his stamp.

On the south-west face of the Ziggurat the wall of the second story is precisely similar; it is preserved for a total length of some 29·00 m., but owing to its proximity to the front of the lower stage its face has suffered severely by the falling away of the bricks; but the buttress widths and recesses are the same as on the north-west. The burnt brick rests on a foundation of grey mud bricks 0·29–0·30 m. × 0·22 m. × 0·15 m. which in turn are laid over a single course, roughly put in, of burnt bricks, whole bricks and fragments mixed, measuring 0·26 m. × 0·17 m. × 0·065 m., and therefore taken from some building of Larsa date and re-used here. Behind it there is the same mass of red mud brick, and in this there are the same rectangular recesses filled with burnt-brick rubble; both the west and the south corners have completely disappeared.

On the south-east side the remains are more fragmentary and confused. The level here is much lower, the slope from the top of the ruin to the south-east edge being pronounced (see the section, Pl. 81); the original terrace wall of Ur-Nammu is overlaid with the large Nabonidus mud bricks which were found to extend in front of it, over the various pavements and floor-levels, for a distance of about 2·00 m.; the Larsa burnt brickwork forming the highest part of the projecting south-west wall of the old terrace chamber (Pl. 57 *b*) had been trimmed down and entirely buried by the mud bricks of the new Ziggurat core; the gap between it and the face of the terrace wall had been filled up with broken mud bricks: two types of bricks, both grey in colour, are used indiscriminately, 0·29–0·30 m. sq. × 0·14 m. and 0·30 m. sq. × 0·085 m. To this mud brickwork there is no facing of burnt brick.

Just by the east corner of the Ur-Nammu upper terrace there had been

laid what looked like a pavement of burnt bricks of Nabonidus, many of them bearing his stamp, set in bitumen and consisting of eleven courses; it extended from almost the corner of the building to the second buttress where it ran up against and was practically incorporated with the old Larsa and Ur-Nammu pavements, but its top was three courses above theirs. It came nearly up to the face of the Third Dynasty terrace wall, and it almost, but not quite, masked a breach in that wall where the brickwork had been hacked away so as to expose the grey brick of the Ziggurat core—the gap had been only roughly filled with loose bricks, but it had been hidden. On the top of this was mud brickwork which from the south-east edge of the 'pavement' rose to a height (at the back) of 2·25 m.; the bricks were grey in colour, hard and of good quality, measuring 0·29–0·30 m. sq. ×0·10 m.; above them came the red mud bricks, measuring 0·30 m. ×0·28 m. ×0·17 m. The face of the grey brickwork was in part preserved and seemed to be relieved by buttresses, but the observation was recorded with a *caveat* on the condition of the remains which made accuracy impossible (Pl. 58 *a*, *b*).

The burnt-brick patch which looks so like pavement but has mud brick above it led me so far astray in 1924 that its real character had best be made clear at once. That it is the one surviving part of the foundation of the burnt-brick terrace wall of Nabonidus is impossible, for (*a*) it lies well within the line of the inner face of that wall, as is proved by the fact that a little to the south-west the mud-brick core extends beyond it, and (*b*) both the grey mud bricks and the red mud bricks of the upper courses of the Ziggurat core run over the top of it. That it was put here as a foundation for the mud-brick core never occurred to me, because such a foundation nowhere else exists; yet I have no hesitation in saying that this is what it is. The reason for my change of view is the breach in the Ur-Nammu wall behind it. It is perfectly clear that Nabonidus' workmen began their task by levelling the top of the ancient ruins so as to have a good surface on which to lay their own bricks. Where a pavement was to come a mere level was sufficient, and even if it was of loose rubbish that did not matter, for the pavement, destined to be some 2·00 m. thick, was solid enough in itself for any weight that would ever rest on it. But where the walls or the massive core of the new work were to be built a really firm base was required and always the workmen dug down until they came to solid brickwork. Here, on the south-east side of the old Ziggurat, they cleared the pavements that lay in front of the upper terrace wall and laid their bricks directly on them; this is the case immediately to the south-west of the patch in question. Where the old pavement fails to the south-east the mud brick of Nabonidus starts at a lower level, resting on the debris (presumably there was to be only flooring here and a stronger foundation was unnecessary), and is fitted very neatly against the edges of the broken burnt-brick mass. Doubtless they cleared right up to the corner and found the pavement in much the same condition as farther on. But Nabonidus was an antiquary; he was anxious to find the foundation-inscriptions of the original builders, and that he did find them is proved by the fact that he quotes from them in his own foundation-cylinder texts. The

place where they were to be looked for was the place corresponding to that in which he put his own cylinders, namely, in the corners of the building: his workmen, suspecting that they would be found in the heart of the outer wall and low down in it, dug through the old pavement and from the hole thus made attacked the wall-face. In so doing they defeated the object with which they had undertaken the clearing of the pavement; instead of a firm, level surface of burnt brick they had a rough hole from which all the burnt brick had been removed; so they proceeded to make this good, and partly with new bricks of their own and partly with the old bricks which they had torn up they patched the pavement, making the new work more or less flush with the old, and so had a continuous level to serve as a foundation. In any interpretation of the Ziggurat ruins this intrusion of Neo-Babylonian brickwork at a wrong level must be disregarded; at the most, it implies that above it there was a building proper and not merely a floor.

We have here on the south-east side no remains at all of Nabonidus' burnt-brick second terrace wall—the ruins are weathered down below its level—and we have nowhere any burnt-brick remains of any higher terrace than the second. The whole of the top surface of the ruins consists in a mass of mud bricks similar in character to those which make a clean face rising behind the burnt-brick walls on the north-west and south-west sides. These are laid over the top of grey mud bricks, but since at the east corner both alike come over the top of the patch of Nabonidus burnt brickwork the two are strictly contemporary and both are the work of Nabonidus. On the north-west side of the Ziggurat the mud bricks of the wall and pavement foundations are of the grey variety, but under the wall (not under the pavement) the two top courses are of the red type, and from this level upwards red brick is used for the filling behind the wall; at the east corner the red bricks, starting at 2·25 m. above the top of the burnt-brick foundation, are at the same level; over the levelled top of Ur-Nammu's second story the bricks first laid were red, and these come rather more than half a metre lower down; but as breaks in the bonding of the brickwork of the core show that the bricklayers worked in independent gangs, and since those at work on the higher level in the centre were not likely to keep pace exactly with those beginning on the lower terrace, so slight a variation of level need not involve any difference in time, and it is fair to say that at a definite point in the process of building a new material was substituted for the old. The red bricks have been described first by Taylor and afterwards by myself and others as partially burnt, or lightly fired; exactly similar bricks form the upper part of the (contemporary) ziggurat at Kish,[1] and of them the same description has been given, but it is certainly wrong. The bricks, though sometimes quite hard, are more often soft and crumbling, resolving themselves into a coarse grit which with no more than the pressure of the fingers can be reduced to a fine powder—it was this quality that led to their being termed '*lightly* fired'. But the bright colour which does look like that of fired clay is common to them and to the mortar in which they are laid and to the plaster

[1] S. Langdon, *Excavations at Kish*, p. 45.

which covers them, and what is true of one must be true of the other. It has been suggested that the building was carried out in crude bricks and that afterwards the whole mass was burnt as one block: but apart from the difficulty, not to say the impossibility, of applying a uniform heat to the whole—and the colour, subject to such modifications as I shall describe later, is uniform throughout—there are other difficulties, (*a*) that the mortar and the plaster contain a good deal of chopped straw which has not been burned, and (*b*) that the layers of reeds and matting between the courses have not been burned either. The bricks are not burnt. At one time I was inclined to think that they were made of burnt earth, which would have the crumbling quality and perhaps the red tint, but the theory is not necessary; a clay such as the English Rockingham Body has much the same colour and consistency and when mixed with water will set as hard as or harder than the best of the Nabonidus bricks. As regards the mortar being of the same colour, it may well be that it was made on the spot by kneading with water the crude red bricks which had been broken in transport.

Certain peculiar features of the building should be noted here.

The Neo-Babylonian workmen levelled the ruins by cutting them down; in a few places on the top of the second terrace where a good level could not easily be got by cutting they put down a course or two of their own bricks to make a better surface, laid dry, with loose sand filling the interstices. Then, on the top of the old second story, a layer of bitumen was spread and over it were laid parallel with the wall-face long, thick reed-stems and then matting, the whole layer being still, in spite of compression, 0·025 m. thick; this layer came right over the top of the old terrace wall. Meanwhile, the workmen employed on the lower terrace had been laying on such foundations as they discovered *in situ* the big grey mud bricks (0·28–0·30 m. sq. ×0·14 m.) and had brought their work up, approximately,[1] to the level of the existing top of the second story; and then the new material was employed. The red bricks measure 0·29 m. ×0·21 m. ×0·15 m. and were very loosely laid with wide interstices between them; only mud mortar of the same colour was used, but between the courses were put reeds, laid parallel to and at right angles to the wall-face in alternate courses, and matting. Where the matting layer was thin it was now usually dead white in colour; where it was thick it was generally black or dark brown, but examples of reeds were found which were intact and extraordinarily fresh in appearance. Where the Nabonidus filling overhung the burnt-brick terrace wall of Ur-Nammu there was a horizontal band of discoloration, the lowest course of bricks being almost black, the course above it reddish-grey fading off to red; this was not the case uniformly all along the line, but it was true of a sufficient number of individual bricks to make the general effect quite marked; the discoloration did not extend back over the wall itself, nor forward into the filling in front of the terrace line; it came above the slight interval between the old wall-face and the Neo-Babylonian mud-brick core; the reed course here was similarly

[1] Some of the gangs had kept pace exactly and the lowest course of red bricks runs unbroken from the upper terrace out over the grey brick of the lower terrace, but this was not invariably the case.

discoloured, but was definitely not burnt. In places higher up in the brickwork over the old second terrace the same phenomenon was more pronounced. The five lowest courses were bright red over the whole area explored; the sixth and seventh courses were of a slightly deeper colour over the terrace edge, but 1·50 m. towards the interior the colour changed to a dull smoky grey which continued for the space of three bricks in the sixth and six bricks in the seventh course; then both courses were of bright red bricks until with the fifteenth brick from the terrace edge both courses again took on a greyish tone and after this the sixth course continued uniformly grey, while the seventh course began by having bricks light red above and grey below and went on with very dark, almost black bricks; in the cross-cut made by us to follow the face of the third story of Ur-Nammu's building on the north-east the grey colour spread upwards from the seventh into the eighth course, on the south-west it failed altogether, turned red and then, at the end of the cut, began again to darken. All along the courses immediately below and immediately above are of the usual bright red colour; and always the colour of the mortar changes with that of the bricks. Between the red and the discoloured courses the layer of reeds and matting is thick and where the bricks are blackest this layer is white below and black above; otherwise it is white throughout; between the two discoloured sixth and seventh courses, where the bricks are red the mortar is red and the matting white, where the bricks are black the mortar is smoky grey and the matting is dead black; between the seventh and eighth courses the mortar is mud-grey or red according to the degree of blackness of the seventh course. In quality the black bricks are the same as the red, mostly soft and friable; they, too, are not kiln-fired, but the colour is certainly due to partial carbonization by mild heat and to smoke penetration. The fact that the colour is irregular and fades off from red to grey in the thickness of a single brick and that the discoloration of the mortar varies in intensity with that of the bricks proves that the heat was applied after the process of bricklaying was complete. Now the discoloration of the bricks and mortar in courses six and seven varies in intensity directly with the thickness of the matting layer between them; in the blackest part the layer is 0·025 m. thick, where the colour is unchanged it is 0·007 m. An agency therefore has to be found which will impregnate crude bricks with carbon without materially affecting their hardness, is strongest where the matting is thickest, acts *in situ*, with the same effect on mortar as on bricks, and stops at a definite line below, but operates irregularly upwards. The only possible agency is the matting; where this was unusually thick and happened to get unusually wet (perhaps through the mortar being badly mixed, perhaps because it rained while the building was in progress) it started smouldering like a damp haystack, this being made possible by the loose laying of the bricks which allowed a certain air-passage (note that the blackening was marked above the actual gap in front of the terrace wall), and its slow combustion would have the effect of a smother-kiln and discolour by carbonization the bricks immediately above. At a level 3·60 m. above the top of Ur-Nammu's upper terrace filling there were channels

running through the red mud-brick filling of Nabonidus, made by missing out a line of bricks; they were 0·35 m. wide and 0·14 m. deep; in our cross-cut to the south-west (see Pl. 79) two were found running parallel, north-east by south-west, 0·65 m. apart, ending *c.* 5·00 m. from the south-west face of the mud-brick construction; at 7·00 m. from the south-west face at the same level there were three, running north-west by south-east, 1·25 m., 0·75 m., and 0·75 m. apart, respectively, which ended 1·20 m. behind the back of Ur-Nammu's terrace wall; the outermost of these seemed to connect with the first two which ran at right angles to it. Since these channels did not go through to the face of the brickwork they were not 'weeper-holes' like those in the Ur-Nammu Ziggurat; as we found them they were either empty or blocked with light earth; but it should be remarked that Taylor reports finding 'two rough logs of wood, apparently teak, which ran across the whole breadth of the shaft' in the heart of the mud brickwork of Nabonidus; it is probable that at certain intervals the brickwork was reinforced by a framework of timber. The ends of similar holes can be seen in the sloping surface of the weathered brick mass at a good many points.

In the rubbish lying against the sides of the Ziggurat there were found quantities of bricks of Nabonidus of which one side, or one side and one end, were covered with a bright blue vitreous glaze. These occurred at every stage in the mounds; they were very common, especially on the north-east side, in the layers of broken and decomposed red mud brick, but in level they ranged from the bottom rubbish lying on pavement-level to the present top of the great north-east staircase; it was therefore clear that they came from high up in the building, and since nothing of the sort was discovered *in situ* their position must have been above the level of the existing ruins; that they were less plentiful at the north-west and south-east ends of the Ziggurat than against the north-east and south-west sides may be taken to imply that the building from which they came stood farther from those ends than from the sides, i.e. was central to the Ziggurat.

The only objects found in the course of the excavations were a fragment of a long inscription on diorite, relating to building operations in the Neo-Babylonian period (U. 1625), and part of a magnificent life-size portrait head in diorite of Third Dynasty date. Both were low down in the rubbish against the north-east side of the Ziggurat north-west of the central flight of stairs; both may perhaps have come from the temple in the north-west stair-angle. In the same lower rubbish were found two small fragments of a clay cone which were recognized by Mr. Gadd as being parts of the large incomplete cylinder discovered by Taylor in the ruins at the top of the stairways (see p. 103); the fragments (U. 1560, 1560 *a*) actually fitted on to that which had been in the British Museum for seventy-five years (L. *BM.* 91124). Small fragments of other cylinders, duplicates of those obtained by Taylor, were also found loose in the rubbish.

The above is a detailed statement of what we actually found of the Neo-Babylonian Ziggurat; obviously the remains are scanty, and since their present condition is in part due to the destruction of standing walls caused

by Taylor's excavations the report would not be complete without some description of what he destroyed. His own words had best be quoted. Taylor reports:[1]

'The summit of the second story is slightly dome-shaped, and depressed at each corner; this however, I am inclined to think is the effect of rain and wind, as on excavating I found it a solid mass of partially burnt bricks, 13 inches square and 5 inches thick. The depression at the corners is very abrupt, and at each of these corners there was a breach or opening in the wall, as if some kind of entrance had formerly existed at these points; at present however these parts seem as solid as any other part of the ruin. The fourth corner would I have no doubt have presented the same aspect, but it is now in such a total state of ruin, that the termination of the eastern wall is hardly visible, while none of the southern wall remains. I began excavating the S.W. corner,[2] clearing away large masses of rubbish, formed of the remains of burnt mingled with sun-dried bricks. I worked along, at a depth of 10 feet and a breadth of 6, without finding anything. I then returned, and worked a few feet north along the brick casing of the western wall;[3] here, 6 feet below the surface, I found a perfect inscribed cylinder. This relic was in the solid masonry; it had been placed in a niche, formed by the omission of one of the bricks in the layer, and was found standing on one end. I excavated some little distance further without any success, and then relinquished this corner for the N.W. one.[4] Here, also, I found a second cylinder, similar to the one above mentioned, but at 12 feet from the surface. At this corner I sank a shaft 21 feet deep by 12 broad. The sun-dried bricks, composing this solid mass within, were here of an amazing thickness; their size was 16 inches square and 7 inches thick. Just below the cylinder were two rough logs of wood, apparently teak, which ran across the whole breadth of the shaft. Below the base of the brick casing of the second story here I came upon a wall 10 feet deep, built of smaller and uninscribed bricks; I dug out both ends, and pursued my work a little further without any success. I found, however, that the space between the second story and the first was paved, and I presume the same arrangement was carried out for the whole breadth and length of the space between the edge of the base of the second story and the edge of the top of the first.

Having thus found two cylinders in the solid masonry in two corners, I naturally concluded that the same objects would be found in the two corners still remaining. I sank a shaft in each, and found two other cylinders precisely in the same position, and in the same kind of structure, one at 6 and the other at 2 feet from the surface. This is easily accounted for, when looking at the irregular surface of the ruin, which, at the S.E. corner and the S. side generally, has been subject to greater ravages from rain than the other sides, owing to the greater depression of the surface towards these points.'[5]

Taylor adds:

'Two or three old men of the pastoral tribes who congregate in winter and spring about the ruins, informed me that between forty and fifty years ago there was a kind of room or chamber at the top of the second story, and I think their assertion is borne out by the remains of glazed bricks and nails I found in excavating close up to the wall at (*c*), in plate 2, and which were too high up to have been the remains of the high portion of the second story wall. In addition to this, before commencing my work here, the mounds of rubbish, which completely buried the whole of this face, were higher, if anything than the top of the wall at (*a*). The barrel cylinder was, I have no doubt, originally placed in this upper room, or third story.

'I had almost forgotten to state that, amongst the dust and rubbish on the summit of the second story, I found several small clay lamps, and fragments of fine chased pottery, which would scarcely have been found there, had there not been a chamber or structure of some sort formerly existing at the top.'

[1] In the *J.R.A.S.* for 1855, vol. xv. I quote here only his observations and record of work; his deductions are not to the point.

[2] This should be south, on Taylor's showing.

[3] i.e. south-west.

[4] i.e. west.

[5] Taylor has certainly mixed his compass-points, perhaps more than by merely assuming that the sides of the monument instead of its angles are to the cardinal points. It is the south-east end that has been most denuded, and I suspect that the 'two corners still remaining' were the east and south corners, and that of those described above what he calls south-west should be west and his north-west north, although this is not consistent with his calling the north-east façade the east side, as he does.

(*b*) RECONSTRUCTION

At the close of the 1923–4 season Mr. Newton drew out a reconstruction of the Ziggurat of Nabonidus which was published in my preliminary report[1] as a definitive restoration. The drawing was Mr. Newton's, but it was done in consultation with myself, and at the time I agreed with most of its details and was of course responsible for its publication; it was only in the course of time that I began to be doubtful about its main lines, but in the end I was forced to conclude that it was radically wrong. Since I propose now to put forward quite different conclusions it is necessary to state briefly what the mistakes were and how they arose.

In 1924 we were concerned only with the latest phase of the Ziggurat, and it had been impressed upon me by the Department of Antiquities that everything must be preserved *in situ* and no damage whatsoever done to the existing brickwork; what we did, therefore, on the top of the building was to remove the loose debris only, stopping as soon as real brickwork was encountered and not attempting to probe the lower levels. The reconstruction was based upon the evidence thus discovered, but the evidence was, at the time, misleading. From the texts of the Nabonidus cylinders found by Taylor it would appear that he was the first ruler to restore the Ziggurat since the first construction by Ur-Nammu and Dungi. In the ruins we found stamped bricks of Ur-Nammu and of Nabonidus *in situ*, but none of any other ruler, a fact which seemed to confirm the implication of the cylinder texts. We had then practically no experience of other Mesopotamian brickwork and no criteria whereby we could identify unstamped bricks, and therefore every bit of walling found was assigned by me either to the Third Dynasty or to the Neo-Babylonian age, and I entirely failed to discover that there survived the handiwork of intermediate rulers; the incorporation of such in the Neo-Babylonian restoration naturally vitiated its correctness. One error in particular was a source of serious confusion. At the east corner of the superstructure there remained the lower part of the wall of the second stage, proved by brick-stamps to be Ur-Nammu's; in front of it, on the south-east side, stretched a fragment of the pavement, also of Ur-Nammu bricks, but patched in front of the wall corner with bricks of Nabonidus; I therefore assumed that at this end of the building Nabonidus re-used the Third Dynasty pavement, retaining the original level of the lowest stage, and, since the pavement ran up to the wall, must have used that wall as the foundation of his own second-stage wall, although none of his brickwork survived above that of Ur-Nammu; this meant that the south-east end of the first stage of the Neo-Babylonian Ziggurat was lower than its north-west end, where the actual pavement survived and was at a much higher level. The resultant asymmetry of the monument I declared to be proved by material evidence. Really, as has been stated above[2], the surface of the pavement is largely of Larsa bricks laid over the original pavement of Ur-Nammu, and the part of it containing Nabonidus bricks is a patch put in not as flooring

[1] *A.J.*, vol. v (Jan. 1925), p. 9 and Pl. III. 2.

[2] See p. 129.

but as foundation where a hole had been made by antiquity-hunters. Similarly, the courses of burnt bricks on the top of the south-west wall of the chamber half-way along the stage front I took to be Neo-Babylonian for the simple reason that they were obviously not of Third Dynasty date; because the Nabonidus mud brickwork came over the top of them I assumed them to be foundations of something at right angles to the face of the stage, and the slope at which they were laid led me to assume a battered front; since we were careful to destroy nothing of the existing brickwork the mud brick filling the chamber was not disturbed, and its pavement was not cleared; the solid filling and the sloped walls seemed to justify the restoration here of a staircase giving access from the lower to the upper platform. Really the sloped burnt-brick construction was of Larsa and Kassite date and the whole of it was buried in the filling of the Neo-Babylonian second stage.

As regards the upper stage, wherever the burnt-brick casing of Nabonidus survived it stood to a height uniform on the three sides, north-east, north-west, and south-west, of the monument, and its level top seemed to me to be original; since there are no modern towns in the vicinity of Ur the quarrying of the site for the sake of the burnt bricks, such pillage as has taken place at Babylon, out of whose ruins Hillah and much of Baghdad have been built, seemed unlikely,[1] and I concluded that this level gave us approximately the top of the second terrace of Nabonidus.

Above and behind the burnt brickwork rises the sloped wall of red mud bricks, which I then took, as others had, to be lightly kiln-fired; in view of the distinctive colour of these,[2] which could not be without significance, and of the fact that they had been smoothly plastered with mud of the same character, I believed that we had to deal with an external face and that this was the wall of the third Neo-Babylonian terrace: the recesses in the wall-face I tentatively connected with the θῶκοι ἀμπαυστήριοι in the Ziggurat of Babylon described by Herodotus, and could explain the fact that they had been filled in with bricks bearing the stamp of Nabonidus only by the suggestion that the architect here changed his plans at the last moment. All this was wrong. In 1926 Dr. W. Andrae, Director of the Vorderasiatische Abteilung of the Berlin Museums, who in company with Dr. Jordan paid a visit to Ur, suggested to me that the bricked-up recesses in the top stage of the tower might be 'keys' for securing the casing-wall to the mud-brick core, and quoted analogies for this from his excavations at Babylon; I was not convinced at first, but as I had always felt that the explanation we had given of these 'recesses' was unsatisfactory I grew gradually more inclined to his view—a view which by subsequent excavations was proved correct. A second difficulty, which existed in my own mind, was that Mr. Newton's

[1] Some quarrying, however, has taken place. From the upper part of the Ziggurat itself nine or ten courses of brickwork at the stair-head have disappeared since the nineties of last century. It is worth noting that in the desert some twenty-five miles to the south-east of Ur there are the ruins of an outpost fort established by one of the Muntafiq sheikhs early in the nineteenth century; the lower parts of all the buildings are constructed with burnt bricks of Bur-Sin, apparently taken from Eridu (Abu Shahrein).

[2] On this see hereafter, p. 142.

reconstruction made the original Nabonidus Ziggurat not very much higher than the existing ruins. When we first came to Ur the whole structure was buried in debris, only a small proportion of which was blown sand, sloping down gently from the top for a distance from the foot of the Ziggurat of more than thirty metres, and it seemed doubtful whether the dilapidation of the suggested building could have accounted for so great an accumulation of broken bricks and rubbish. Finally, I asked Mr. Rose to put matters to the test by calculating the cubic contents of the debris and of the parts missing from the Ziggurat as restored and comparing the two; the problem was not simple, for allowance had to be made for wind action both in heaping up drift sand and in denuding the ruins and the rubbish-heaps, as also for the contribution made to the rubbish-heaps by the Neo-Babylonian buildings erected either against or close to the tower on each of its four sides, buildings of which very little remains as a basis for calculation; nothing like accuracy could therefore be achieved, but the results were none the less conclusive. For on the most conservative estimate it became clear that for the Ziggurat to have been buried as it was at least four metres would have to be added to the height as given by the restoration published by me in 1925, and it was more likely that the original height was double that. But an addition to the height involved a radical change in the published plan also; for the upper staircases there suggested could not be carried up higher without reducing the area on the top stage available for the temple to impossibly small limits or to nothing; moreover, if Dr. Andrae's suggestion were correct, the top stage would in any case have to be remodelled.

The new work undertaken on the top of the Ziggurat in 1931–2 had therefore a double purpose: we hoped to obtain material for a reconstruction of the Ziggurat of Ur-Nammu, but also we had to make an entirely fresh start on the reconstruction of that of Nabonidus. The facts discovered have been detailed above, and I would now put forward the conclusions which I would derive from them.

Nabonidus found the lowest stage of the Third Dynasty Ziggurat still standing, and he utilized it as the base of his own work. The ground-level of the Ziggurat terrace was encumbered with ruins, and he accordingly raised it by a little more than a metre, thus burying the footings of the original structure. The treads of the three great converging stairways were raised correspondingly (these are the treads which in the side flights are preserved to-day) to 1·10 m. above the old, and as a result there had to be a corresponding rise in the level of the landing at stair-head. Between this and the (constant) level of the top of the first stage there was now a vertical interval of only 1·20 m. to be bridged by the stairway behind the gate-tower; either therefore the number of its treads was reduced or it had a gentler gradient.[1] There is no trace left of the Neo-Babylonian gate-tower, but as the stumps of the Third Dynasty piers are there and would necessarily have been worked into the scheme it can safely be assumed that a gate-tower did exist and probably it differed very little from that of Ur-Nammu.

[1] In the reconstruction I have adopted the latter alternative.

Behind the gate-tower the pavement of the first stage is preserved, the old Third Dynasty pavement patched and covered with new bitumen. On the north-west side there are plentiful remains of the burnt-brick pavement lying at the same level as that on the north-east; on the south-west side there are no actual remains, but the footings of the upper stage wall prove that the level of the pavement here had been the same. On the fourth side, the south-east, the grey mud-brick filling of Nabonidus' first stage extends more than 4·00 m. beyond the Ur-Nammu upper stage wall, and where it is preserved over the top of the south-west wall of the terrace chamber it is still 2·40 m. above the Third Dynasty pavement; since at the north-west end the height of mud brickwork between the Ur-Nammu pavement and the foundations of the burnt-brick retaining-wall of Nabonidus' second stage is 2·95 m. and at the south-east end we have to allow for denudation, this can only mean that the pavement was uniform throughout and that the whole of the first stage was on the same level. This had not, of course, been the case in the Third Dynasty building, in which on the north-east side the stair-head platform was higher than the first stage as a whole and was connected with it by descending flights of steps; Nabonidus retained the stair-head level and raised that of the two ends and of the south-west side of the Ziggurat to the same height. This raising of floor-level necessarily entailed the heightening of the retaining-wall of the Ziggurat itself, except at the top of the great stairways; we did not detect any Neo-Babylonian brickwork on the south-west side, where the retaining-wall stands highest, and elsewhere it is denuded down below the level of the Third Dynasty floor; but that the wall was heightened in Neo-Babylonian times is certain. To this extent, then, even the lowest stage of the Third Dynasty Ziggurat was modified by Nabonidus; he wanted a base, as lofty as he could make it, whereon his new superstructure could be built.

Of that superstructure very little remains at the present time, but what is left possesses certain features which do seem to suggest the nature of the building as a whole.

As can be seen on the ground-plan, Pl. 79, the south-east end of the superstructure has disappeared altogether, as have the north and west corners,[1] and we have left the greater part of the south-west, north-west, and north-east walls.

Taking first the north-west and south-west walls, Dr. Andrae's suggestion about the recesses is correct. These do not exist only in the exposed face of the red mud brickwork, but the red mud brick goes down behind the burnt brick to the third course from its foundation, and the recesses go down to the same level and are filled with burnt-brick rubble and complete bricks set in good mortar and bonded into the substance of the external burnt-brick wall. Obviously what is true below, where the burnt brick is preserved, was true also above, where it is now missing; the burnt brick is the facing which originally continued upwards; its disappearance above a certain level is accidental, due to a systematic piece of brick-quarrying, and the red mud

[1] Destroyed by Taylor in his search for the foundation-cylinders.

brickwork, in spite of its plastered face, was completely hidden.[1] The face of the burnt-brick casing-wall is vertical, not battered, its thickness is *c.* 1·80 m. and its original height is unknown; it is relieved by shallow buttresses, but is otherwise straight.

On the north-east side the wall, from where it is broken away towards the east corner, is of exactly similar nature, 1·80 m. thick, buttressed, with vertical face, and keyed into the mud-brick core of the second story. But on the line of the south-east external face of the gate-tower this wall returns south-westwards for a distance of 2·20 m. and then again turns to the north-west and on this new frontage runs to the north corner of the superstructure; for both these sections the wall is only 0·90 m. thick, has no buttresses, and is not keyed into the mud-brick core. At 9·30 m. from the return angle there is built against the wall-face a staircase of burnt brick of which the treads and the balustrade wall are bonded together and have a width over all of 1·70 m.; the outer face of the balustrade wall is relieved with buttresses exactly like those of the north-west and south-west sides; and it will be remarked that the stairs and balustrade together give a wall-thickness almost identical with that of those walls.[2] This must mean that the staircase, or something corresponding to it, continued right round the upper stage of the Ziggurat to the return angle in front of the south-east face of the gate-tower. From that angle to the start of the staircase there was no such feature and the burnt-brick casing is a mere casing and nothing more, and a thickness of 0·90 m. was sufficient for the purpose. The fact that on this wall-stretch there are no keys securing the casing to the mud-brick core is further evidence that the burnt brick is a casing pure and simple, not destined to support any other strain. Where the stairs start the total thickness of wall and stairs, 2·60 m., gives a solid block amply sufficient to support any top weight; on turning the corner the builders effected an economy by substituting the keys for the regularly built inner wall, which was now omitted; upon the keys would rest the set-back wall of the next stage, its front overlapping by about 0·10 m. the solid burnt brick of the second stage wall.

The little staircase against the north-east front is the only means of access from the first to the second stage floor. In the Third Dynasty Ziggurat there had been a stairway continuing the central flight of the triple staircase through the back doorway of the gate-tower, just where the set-back of plain walling occurs in the Neo-Babylonian building. But the top of the Ur-Nammu stairs has been shaved down flat by the workmen of Nabonidus and the wall over which those steps originally ran has been rebuilt as the casing of the new second stage; in the Neo-Babylonian plan there is no staircase at this point, and the little flight behind the buttressed balustrade wall is the only staircase with which we have to deal in any attempt at reconstruction.

[1] We have learnt from other examples that the completion of a mud-brick core and its plastering with mud was a not unusual preliminary to the addition of a burnt-brick casing.

[2] Probably identical. The stairs are bonded into the wall rising behind, so that its bricks must project into the line of that wall. The same would be true of the north-west and south-west sides where the set-back occurred at a higher level; i.e. the width of the passage shown in the restored drawing above those walls would be 1·70 m., the extra 0·10 m. representing the bond with the set-back wall.

It is, I think, obvious and beyond question that the staircase block is constructionally one with the 1·80 m. buttressed casing-wall on the north-west, south-west, and at the south-east end of the north-east sides of the Ziggurat, and that the latter served as support for a continuation of the stairs or of a passage corresponding to the stairs. At once we have a parallel at Ur to the Ziggurat at Babylon described by Herodotus with its spiral staircase ascending to the temple on the top.

Herodotus describes the Babylonian Ziggurat as consisting of seven stages, and it is natural to suppose that each of these was distinguished by a turn of the spiral stairs. But at Ur we have the first ten treads of the flight preserved, and so steep is the gradient that if the stairs be continued round the monument to the return angle on the north-east front, even allowing for flat landings at the corners, this second stage alone would have a height of about fifty metres; and it is inconceivable that the superstructure raised on Ur-Nammu's base should have been so overpoweringly tall. It is, of course, possible to suggest that the landings began before the corners of the building were reached and continued to run flat after the corners were turned, so that on each of the three faces, north-west, south-west, and south-east, there was a central flight with a longer or a shorter flight at either end; or that the corner landings were small but that the steps occurred only in the neighbourhood of the corners and that there were flat stretches along the middle of each side;[1] by either suggestion the disproportionate height of the stage can be reduced to more reasonable dimensions. But we should still be left with a single stage and a single turn of staircase as against the seven stages of Herodotus,[2] and, what is more important, we should be disregarding the most peculiar feature of the existing ground-plan.

That feature is the projection of the buttressed wall at the south-east end of the north-east side. If it were merely intended to accommodate the return of the staircase it should correspond exactly with the salient made by the projection of the stair foot at the north-west end of the same front; but it projects 2·20 m. from the central stretch of plain walling as against the 1·70 m. of the stair foot. For this there must have been a valid reason.

It is safe to assume that the second stage was not the highest. We have the ground-plan of the second stage virtually complete, and if we superimpose on it a third-stage ground-plan exactly similar, but with its projections on the north-east front reversed, we obtain a space above the buttressed projection at the south-east end of the second stage equal to the width of the stairs and balustrade wall at the north-west end *plus* the width of the stairs

[1] Here we have special reason to deplore the damage done by Taylor in his search for inscriptions. If I rightly understand his confused compass-references it was in the north corner that he sank a shaft 21 feet deep by 12 feet broad, finding the cylinder at a depth of 12 feet from the surface, i.e. from the top of the standing brickwork. An extra 12 feet of standing brickwork at this corner might have shown us the nature of the landing at the angle of the upper stage.

[2] We are not bound by the description of Herodotus, since it is certain that not all ziggurats were seven stages high, three stages or four being equally common. But the ziggurats of Babylon and of Ur were almost contemporary and each was based on the lower stage of a Third Dynasty ziggurat, so that similarity of elevation is probable. In any case, a Neo-Babylonian ziggurat would seem to have required a minimum of three stages, and such are quite incommensurate with a stair gradient so steep as that of Ur if it is to be continued round even a part of the superstructure.

themselves; that is, we have room for a corresponding stairway *plus* a passage of the same width as the stair-flight. The reconstruction shown on Pl. 87 is based largely on this fact. I suggest that the stairs were confined to the front of the monument; round the back and sides the stairs were continued by level passages of the same width which ran on along the north-east side to the corners of the salients there, flanking the new staircase which climbed up against the stage wall to the outer angle of the superstructure; in the centre,[1] where the wall has no buttresses, there were no stairs, but recessed landings which seem to answer to the resting-places, the καταγωγή τε καὶ θῶκοι ἀμπαυστήριοι, of Herodotus. As can be seen from the isometric drawing on Pl. 88, this reconstruction gives to the Ziggurat a symmetry which is unobtainable otherwise, and it does allow of a building seven stages high (including the base), while if its height be thought still excessive it could be cut down by two stages without loss of symmetry.

It is satisfactory to find that the reconstruction which seems to be imposed by the nature of the scanty ruins which survive agrees well with the Herodotean account of the contemporary building. Viewed from in front it gives the appearance of a spiral staircase connecting each pair of stages; seven stages give a height not incommensurate with the area of the ground-plan;[2] the 'resting-places' form so prominent a feature up the centre of the monument that they explain the special mention of them by the Greek historian.[3] Whether the temple which crowned the whole was a little one-roomed shrine (or perhaps shrine and ante-chamber) like that of Babylon we have no means of knowing, though due weight must be given to the analogy; it may, however, be considered certain that it was faced with the blue-glazed bricks so common in the debris which, owing to the height up to which they were found, must have come from a building on the top of the Ziggurat and cannot be otherwise accounted for;[4] and the possibility of its having been covered with a gilt dome must be considered in view of its cosmological significance and of analogies to be got from literary sources.[5] There is, of course, room on the top terrace for a building considerably larger than that in the reconstruction, which is based on Herodotus' description; that the door of the shrine is in the drawing put at the south-east end is due to the fact that the stair-head issues on the terrace close to the east corner and it seems reasonable to assume that the visitor on entering the terrace would find himself facing the door of the temple; moreover, if the temple, like most of those of Neo-Babylonian date, was a rectangle deeper than it was wide, the door would be in one of the narrow ends and preferably at the end facing the terrace entrance; and the form of the terrace certainly suits best a building of that shape.

[1] According to this, the Greek μεσοῦντι δέ κου τῆς ἀναβάσιος should be translated not 'half-way up the ascent' but 'in the middle of the ascent', i.e. central to the stairways. Similarly καταγωγή would be descriptive of the 'recess' (in the singular) which runs up the centre of the monument, between the stair-flights, in which, on the several levels, are the (plural) 'resting-places'.

[2] They would also account for the enormous mass of debris collected round the ruins of the Ziggurat.

[3] And they are rightly central to the staircases, as Herodotus says—μεσοῦντι δέ κου τῆς ἀναβάσιος.

[4] Cf. S. Langdon, *Neubabylonische Königsinschriften*, Neb. 11. 25; 15. iii. 15.

[5] Op. cit., Neb. 19. iii. 35, &c.

I have referred above to the cosmological significance of a golden dome, thereby implying a colour-scheme in the building of which this would be one element. When I published my preliminary report in 1925 I believed that the red mud plaster of the upper stage was exposed and treated that colour as part of a scheme of decoration. In a footnote to my account, which I reprint below,[1] Mr. Gadd pointed out the cosmological basis for such a scheme. Now when proof is forthcoming that the red brick and red plaster were but a core completely hidden by the burnt-brick casing the whole previous argument might seem to have fallen to the ground. This, however, is by no means the case: we have still to explain the most striking peculiarity in the construction of Nabonidus' Ziggurat, namely, the use of the red brick in the upper stage of it. I have gone into great detail in treating above of this material; what I would emphasize here is the fact that the change in colour of the bricks coincides exactly with the commencement of the upper stage, and that whereas up to that point mud bricks and mortar alike had been dark grey, they are, above that line, both uniformly bright red (the patches of grey or black being accidental and due to later causes); that in no other Neo-Babylonian or other building at Ur do similar red mud bricks occur—so that the change would not be due merely to the workmen happening to have handy a stock of material of different but normal type—and that a precisely similar red mud brick is employed for the upper stage of the Ziggurat at Kish, where its colour is so marked as to have earned for the mound the Arab name *al Uḥaimir*, 'the little red one'. The change is planned, the material for the upper stage was specially prepared, and apparently it had some special connexion with ziggurats.

Now the lower stage, in which Nabonidus' filling is of dark grey materials, was painted black; this we know because much of the colour is preserved on the walls; it seems to me that the only reasonable explanation of the red materials is that the upper stage of the Ziggurat was painted red. None of that colour survives, but so little of the wall-face exists, and where it does the weathering has been so great that none of it could be expected to survive. We know from evidence of another sort the importance that the Neo-

[1] The ascertained colours applied to the stages of the Ziggurat at Ur are a welcome contribution to the settlement of a much discussed question. While the blue of the topmost shrine is not only attested archaeologically but confirmed by the inscriptions of Nebuchadnezzar, much doubt has been expressed whether the other parts of the building were also coloured. Victor Place reported that he had found traces of colour upon the ziggurat at Khorsabad, and, in spite of sceptics, it now appears that he was probably quite right. But from the fact that some of the most famous ziggurats (e.g. that of Borsippa) bore names which suggested that they were of seven stories the theory was developed that the normal type was a building of seven stories, each coloured the hue that was conjectured to symbolize the Sun and Moon and the five planets (Jupiter, Saturn, Mars, Mercury, Venus) known to the Babylonians. It was even supposed that these colours may have corresponded with those of the seven concentric walls of Ecbatana which according to Hdt. i. 98 were respectively white, black, purple, dark blue, scarlet, silver, and gold. But, even if these colours could be proved to have left traces, or to be identified with the heavenly bodies named, it is quite certain that seven was only one of the numbers of stages which a ziggurat might have, three or four being at least equally common. It is therefore impossible to maintain this theory of the planets, but, as the ziggurat seems to represent an artificial mountain, with the abode of the god upon the (blue) summit of it, there is every reason to see in the arrangement and colouring of the stages a cosmological significance even if its precise import is uncertain. C. J. GADD (*A.J.*, v, p. 14).

Babylonians could attach to the unseen interior or foundations of a sacred building (see my account of the 'Harbour Temple' of Nabonidus in *A. J.*, vol. xi. 4, p. 374), and it is perfectly consistent with their views that the stages of the Ziggurat, each having its associated colour, should be of that colour throughout, and to argue from the core to the case appears to me in the circumstances legitimate.

My original description, therefore, still holds good. The shrine was of bright blue glaze, the upper stage was red, the base was black; seen from the great courtyard of Nannar the Ziggurat rose from a terrace of which the façade, adorned with half-columns in relief, was whitewashed. The four colours in their order have their astrological significance, representing the underworld, the earth, sky, and heaven, and we have here no mere scheme of decoration, but a symbol of that for which the building stood.

CHAPTER XIV

THE RUIN OF THE ZIGGURAT

NABONIDUS seems to have been the last to carry out repairs on the ancient Ziggurat. Nowhere did his work endure for very long, and in several buildings of his there seems to have been wilful destruction followed immediately by reconstruction, which can only be explained by the fact that Cyrus had a violent animus against his predecessor and did his best to obliterate the monuments of his reign. But in the case of the Ziggurat there are visible no signs of rebuilding in the Persian age.

On the other hand, it is obvious that the destruction of the Ziggurat dates from the Persian period, and it is fairly certain that it was not due to neglect and slow decay, but was deliberate and systematic.

On the south-west side of the Ziggurat, close to the south corner of the tower, the ruins of the intramural chambers along the terrace wall and those of the chamber built by Nabonidus between them and the face of the Ziggurat were overlaid by the remains of a potter's works of the Persian period; some of the old walls had been re-used, but between and over them were the actual kilns and the entire area was strewn with broken vessels of glazed clay, wasters, and the little clay tripods used for separating the bowls in the kiln. Here, then, we have evidence that in the Persian age (the kilns could not be more closely dated than the term 'Persian' implies) the terrace of the Ziggurat itself, the most sacred spot in all the city, was not only in ruins, but had so far ceased to appeal to men's veneration that it was invaded by manufacturing works.

On the north-west side of the Ziggurat in the area between the face of the tower and the Temenos Wall built by Nebuchadnezzar, a space which may have contained a temple corresponding to that of Nin-gal on the south-east side of the Ziggurat or may have been an open court (see above, p. 71), there were again ruins of the Persian period (Pl. 76). The foundations of these buildings had been laid in the deep bed of rubbish which had accumulated over the Neo-Babylonian level; some of the walls were of mud bricks, some of burnt bricks, but the latter were fragments more often than whole bricks and were of all sorts and measurements, a mixture collected from the ruins of the city and here re-used in mud mortar. The buildings were not alined to the Ziggurat, and they were not a reconstruction of the Neo-Babylonian, but quite independent of them, crooked and ill-built; while there did not remain of them enough to make a coherent plan there was sufficient to show that these were mere hovels, eloquent of poverty and decay. At the same time they were not like the kilns on the other side of the tower, for they did not bear witness to the complete abandonment of the site as a religious centre. Sunk in the floors were a number of brick-lined pits or granaries, and under the corner of one room we found a clay pot containing tablets, U. 2705–11, cf. U. 2695, 3006; most of them had been reduced by the infiltered rain-water to their original mud, but one or two were legible at least in part; they

were dated to the 10th (?) year of Cambyses, and were records of tithes brought for the service of Nannar. It would, therefore, appear that these miserable chambers belonged to priests and that a faithful remnant was still found to do honour to what was certainly a ruined shrine.

Something can be learnt from the condition of the Neo-Babylonian buildings on the terrace. Everywhere their walls are denuded almost to floor-level. This is true not only of the more exposed buildings such as the Nin-gal temple, but even of those such as the Nannar 'sanctuary' whose back wall of mud brick was built against the wall of the Ziggurat and would, one imagines, have been protected by fallen rubbish; and on the south-west side the top of the walls of Nabonidus' chamber against the Ziggurat stood only a little above pavement-level and very far below the line in the Ziggurat brick-work which showed the level of the earliest accumulation of debris. This can only mean that the walls were destroyed virtually to their present level before enough rubbish fell from the Ziggurat to bury them. Had the decay been gradual and natural this could scarcely have happened, because the shrine on the top of the Ziggurat, and the edges of the Ziggurat stages, would have been the first to suffer; moreover, in each building the debris from the upper parts of the walls would have been enough to protect the lower parts and to preserve them to a greater height than they in fact possess. What we do find is that the Persian buildings, kilns, and chambers lie above Neo-Babylonian walls razed literally to the ground, and that can only result from deliberate violence.

Cyrus did destroy or deface the monuments of Nabonidus, but he did so for purely personal reasons, and was at pains to restore the temples of the ancient gods of Ur for the much better reason that he wished to conciliate his subjects;[1] it is inconceivable that he should have repaired the Temenos enclosure and rebuilt the temple E-nun-maḫ as we know he did, and at the same time have overthrown the principal shrine of the Moon-god. Either Cyrus did here what he did on the E-nun-maḫ site, removed whatever might redound to the credit of Nabonidus and replaced it with his own work, but his own work has perished altogether, or he left the Neo-Babylonian buildings materially intact; in either case it cannot have been very long after the time of Cyrus that what he left of the Neo-Babylonian shrines and anything that he added to them was deliberately and finally destroyed. It is natural to connect the destruction with the change of faith of the later Persian kings. There is no literary evidence for any iconoclastic outbreak on the part of the early converts to Zoroastrianism and up to the time of the visit of Herodotus to Babylon both the fabric and the ritual of the ancient temples were piously maintained; judging from the house ruins and from the tablets found in them, Ur enjoyed a certain prosperity into the fifth century B.C. and its temples must have continued in honour; but soon after that, not later, probably, than 400 B.C., they must have been violently overthrown and even their sites turned to base uses. Within another century, judging by what evidence we possess, the city of Ur was deserted by its inhabitants.

[1] He probably excused his destruction by alleging that Nabonidus had designed his buildings to subserve unorthodox ends.

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PLATES

a. Limestone foundations of retaining-wall, Archaic I, NW. side. (*See p.* 7)

b. NW. retaining-wall: A, stone face, and B, stone core of Archaic I wall; C, mud-brick wall of Archaic I; D, mud-brick wall of Archaic II. Arrows show burnt plano-convex bricks mixed with the stonework. (*See pp.* 1, 8)

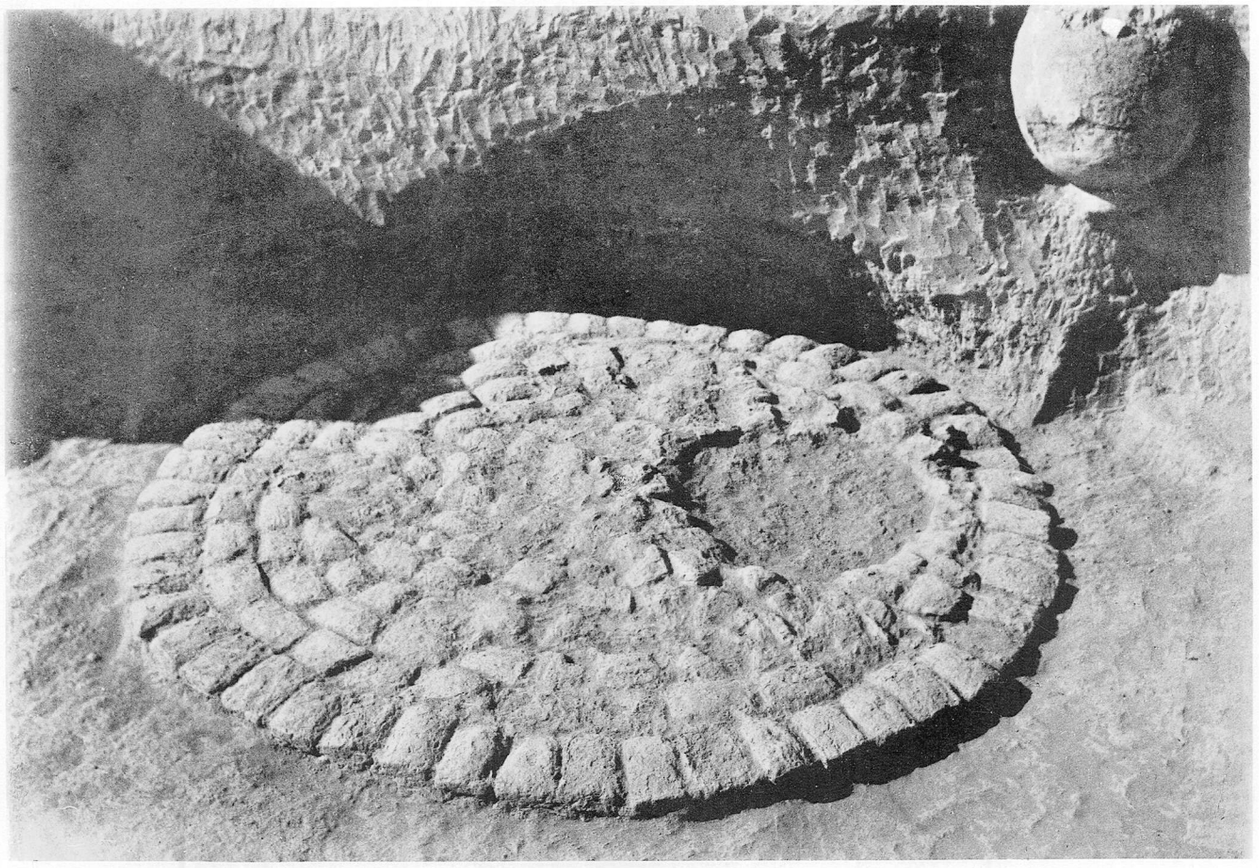
THE ZIGGURAT TERRACE

PLATE I

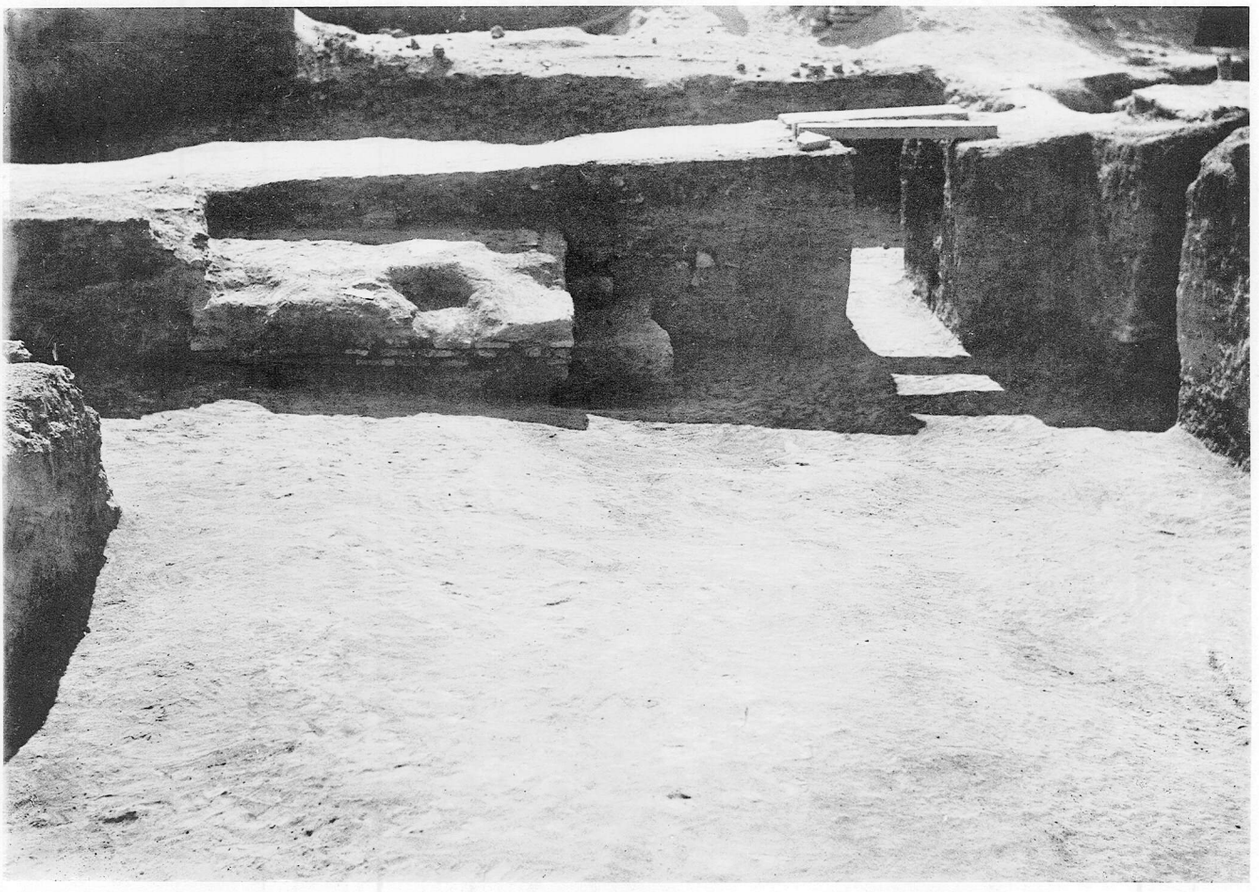
a. The NW. retaining-wall, Archaic I, illustrating the removal of the stonework by Ur-Nammu's workmen: A . . . A: wall of Period Archaic II. (*See p.* 8)

b. Entrance passage in SE. wall, looking inwards. In the foreground, remains of hinge-box and copper sheathed hinge-pole of Archaic I B: at A . . . A the Archaic I B floor-level marked by whitewash line. Work carried down to Archaic I floor-level. (*See p.* 9)

THE ZIGGURAT TERRACE

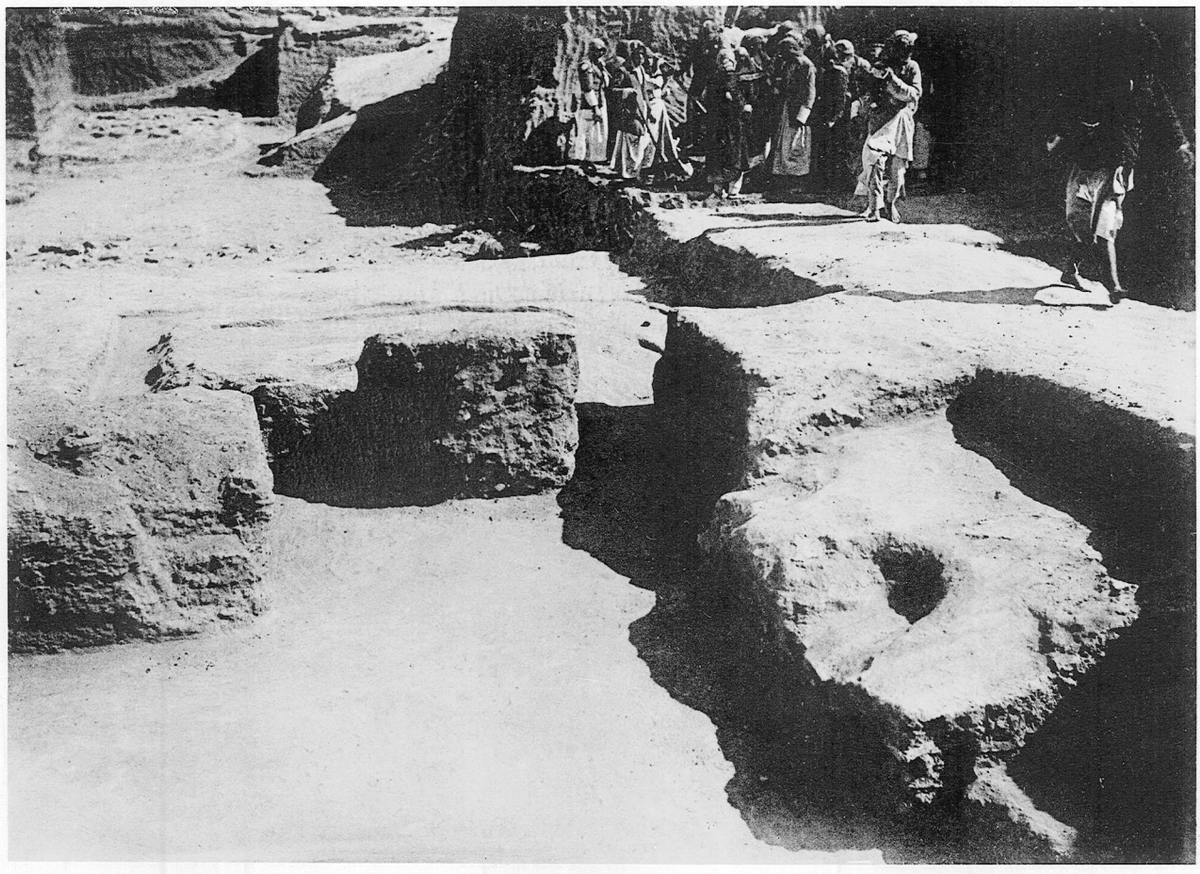


a. Brick base in courtyard SE. of the Ziggurat, Archaic I. (*See p.* 10)

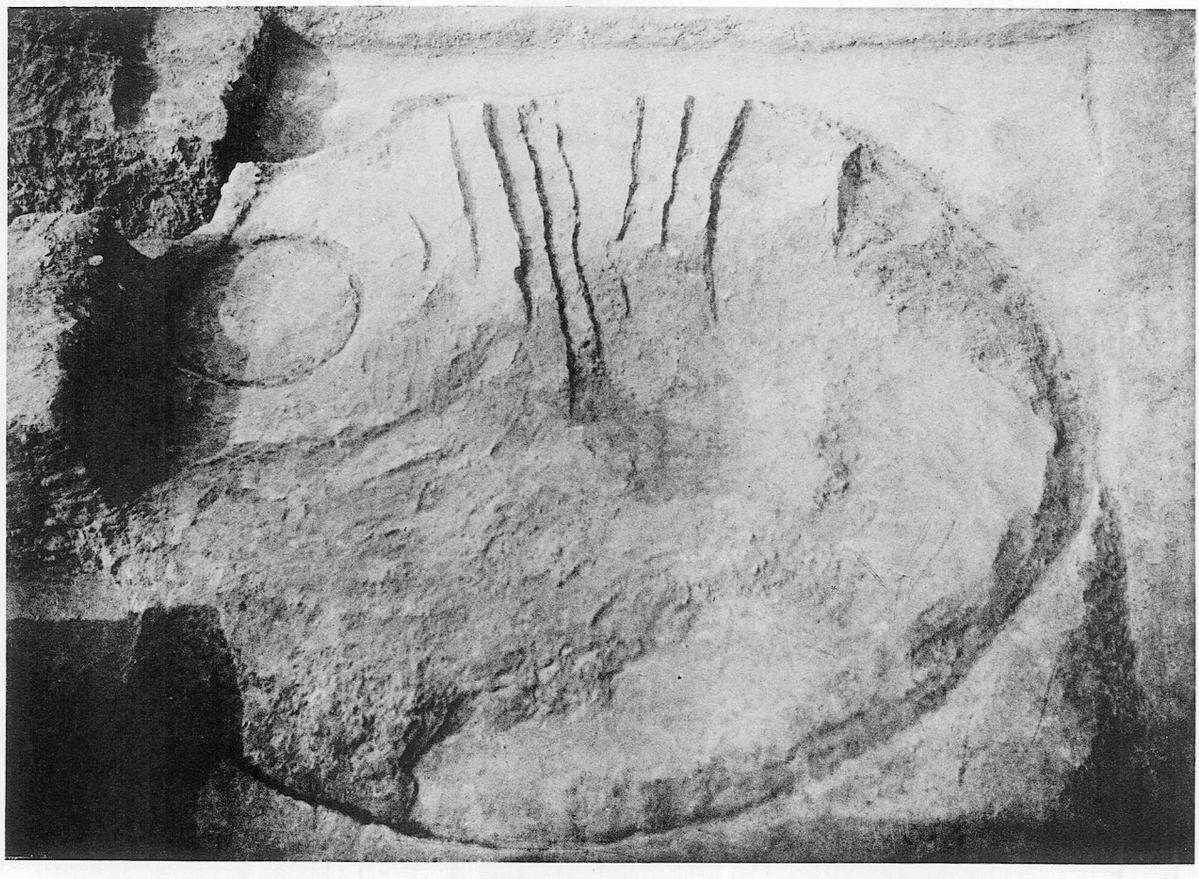


b. Archaic I: the inner court FF, looking SE., showing the altar against the wall and the doorway to room GG. (*See p.* 11)

THE ZIGGURAT TERRACE

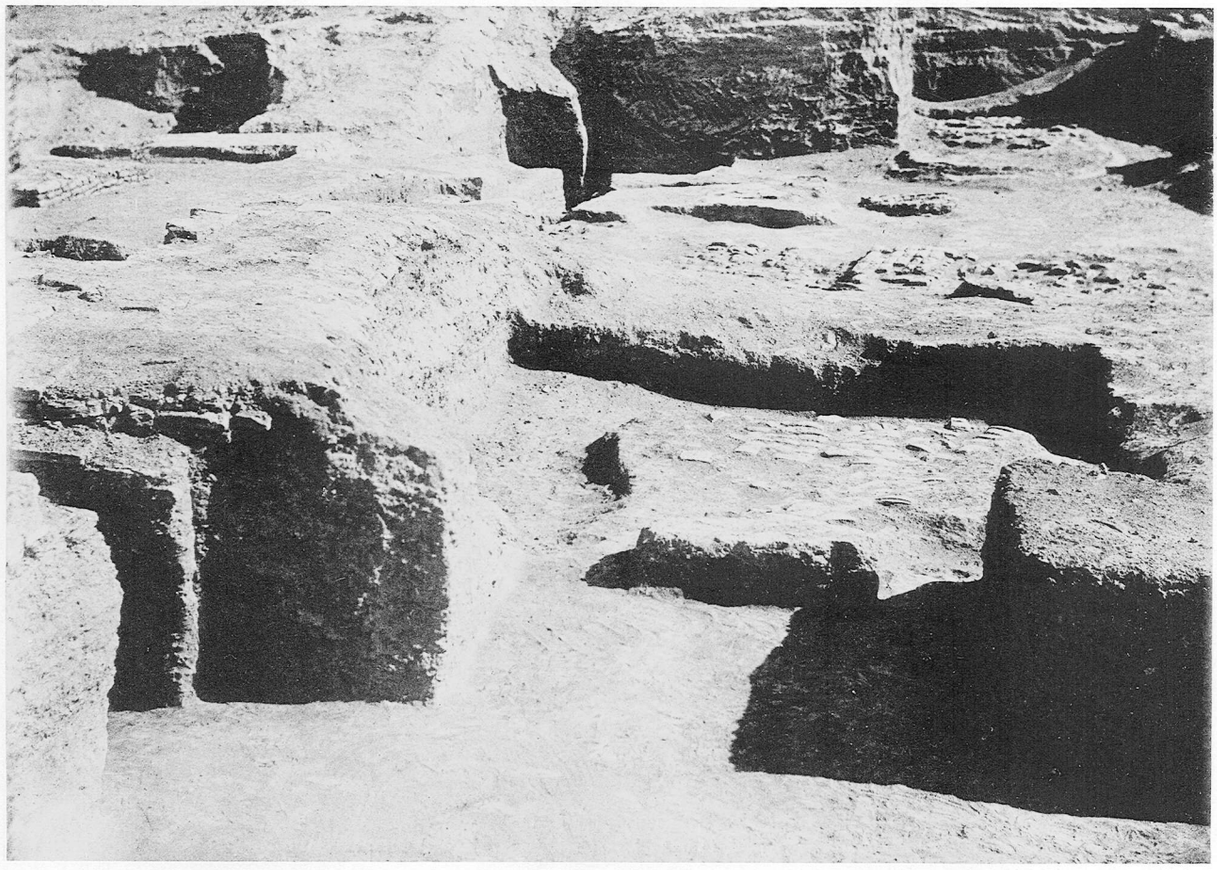


a. Archaic I: the east corner of the court FF showing altar and double furnace-entry of room EE. (*See p.* 12)

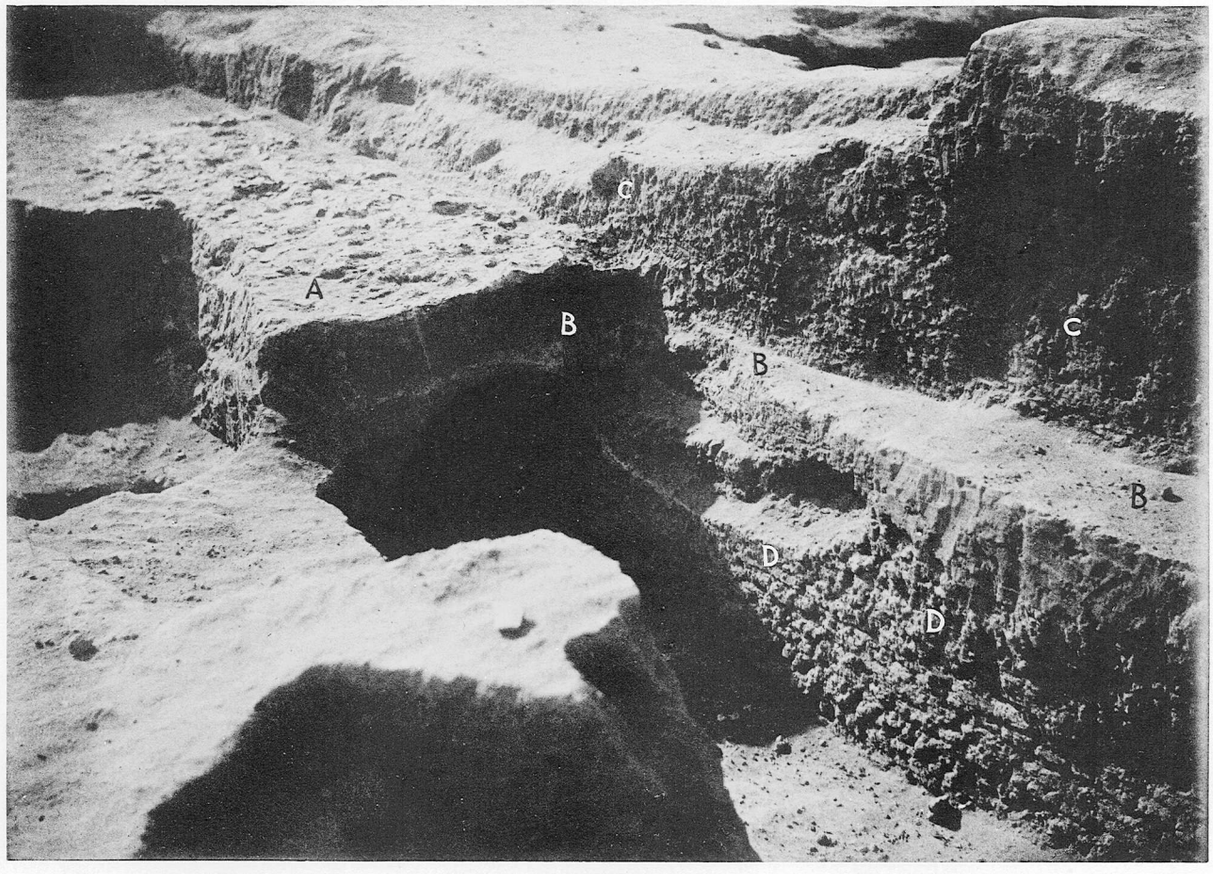


b. Archaic I: room EE: the furnace with its often-repaired floor. (*See p.* 12)

THE ZIGGURAT TERRACE

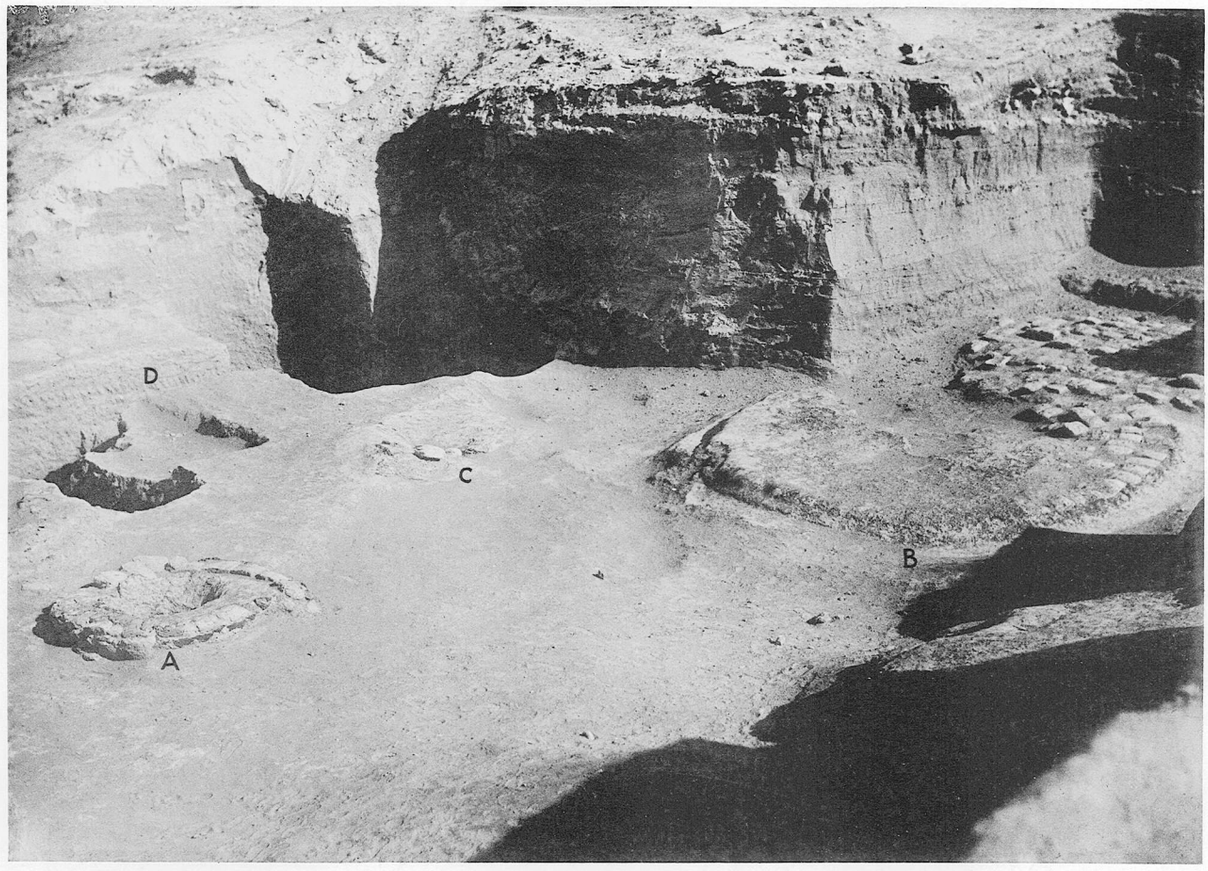


a. Archaic I: north corner of court FF, looking into room DD with its floor reinforced with potsherds, and to the court BB beyond. (*See p.* 12)

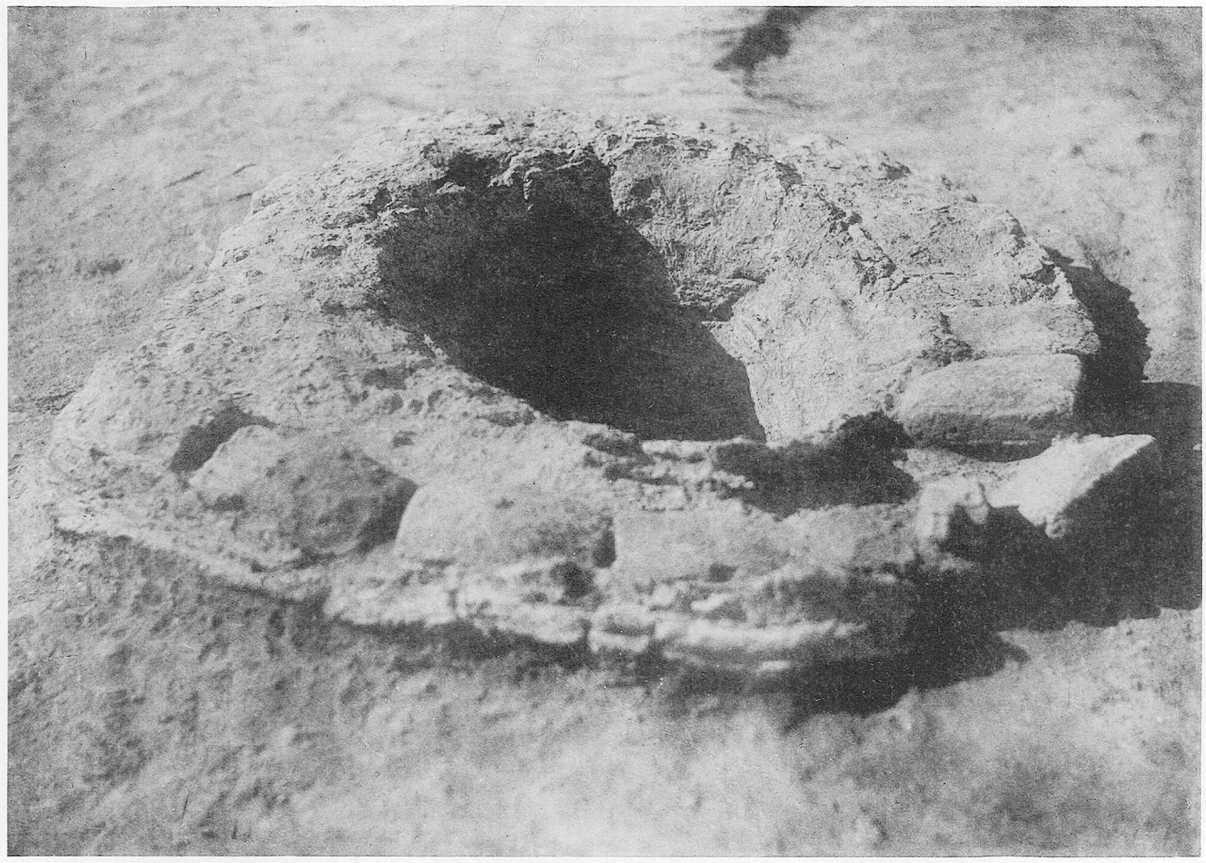


b. The SW. end of courtyard BB, showing: A, the raised floor of burnt brick and bitumen; B . . . B, the early whitewashed floor; C . . . C, wall of Archaic I; D . . . D, wall of Archaic II. (*See pp.* 3, 13)

THE ZIGGURAT TERRACE



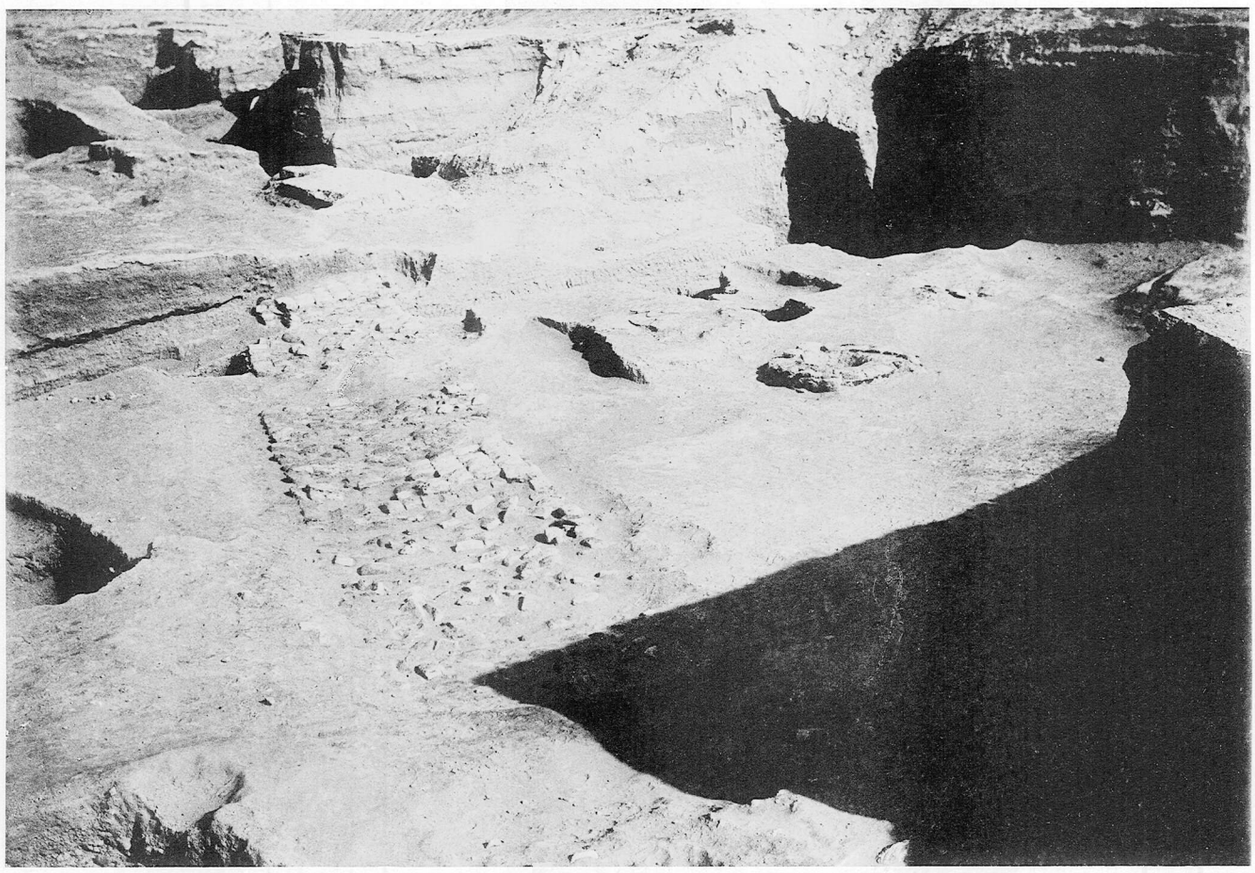
a. The NE. end of the courtyard BB, showing: A, the bitumen-lined basin; B, circular brick base; C, remains of second similar base; D, NW. wall of courtyard. (*See p.* 14)



b. The bitumen-lined basin, court BB, Archaic I. (*See p.* 14)

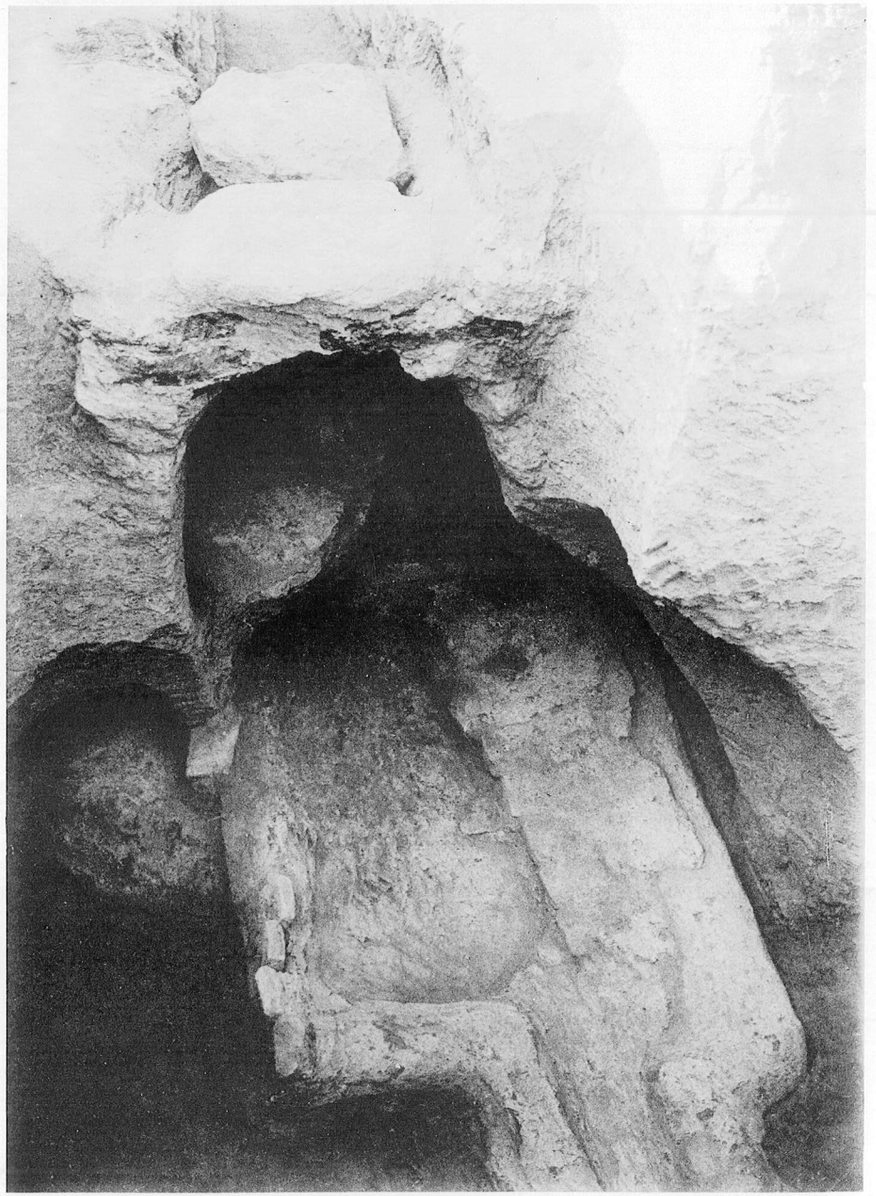
THE ZIGGURAT TERRACE

a. The brick and bitumen base, court BB, Archaic I. (*See p.* 14)

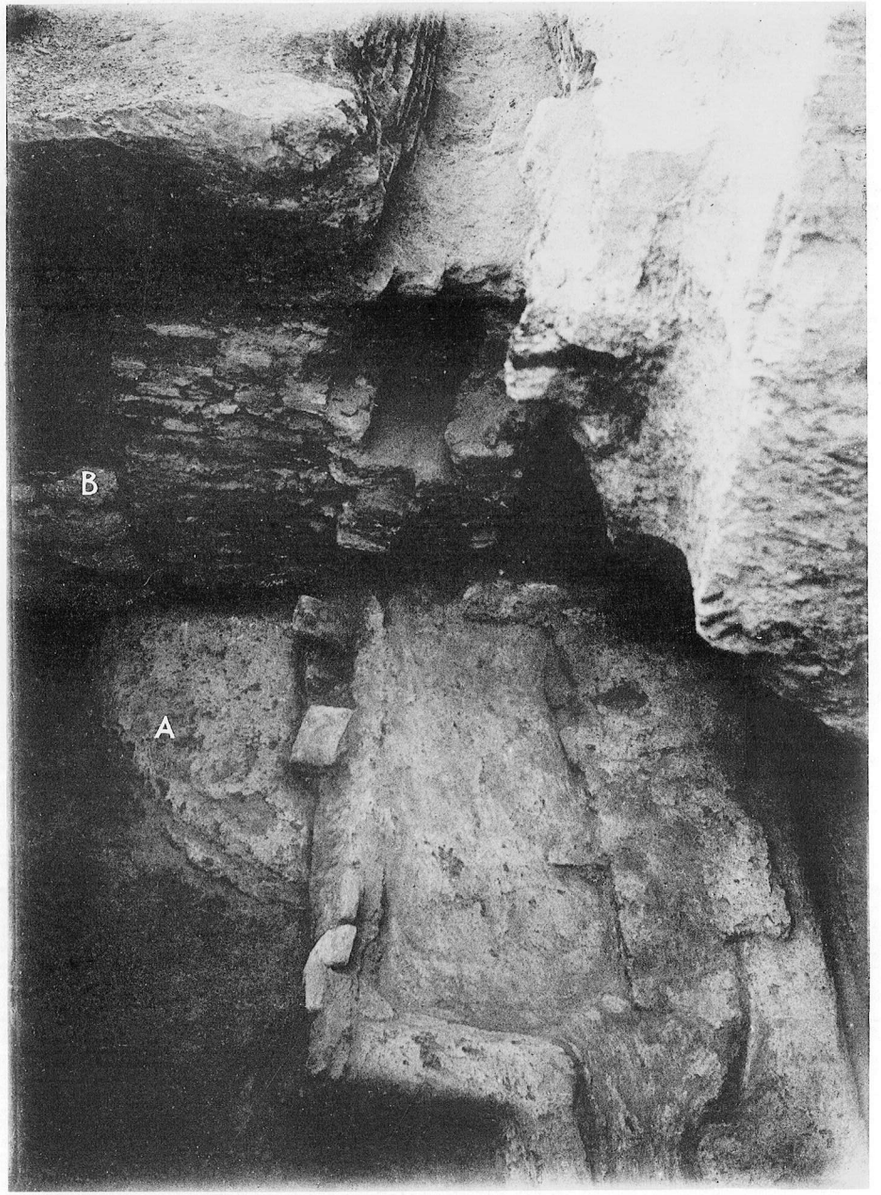


b. The courtyard BB, Archaic I, showing the remains of the high brick causeway. (*See p.* 14)

THE ZIGGURAT TERRACE



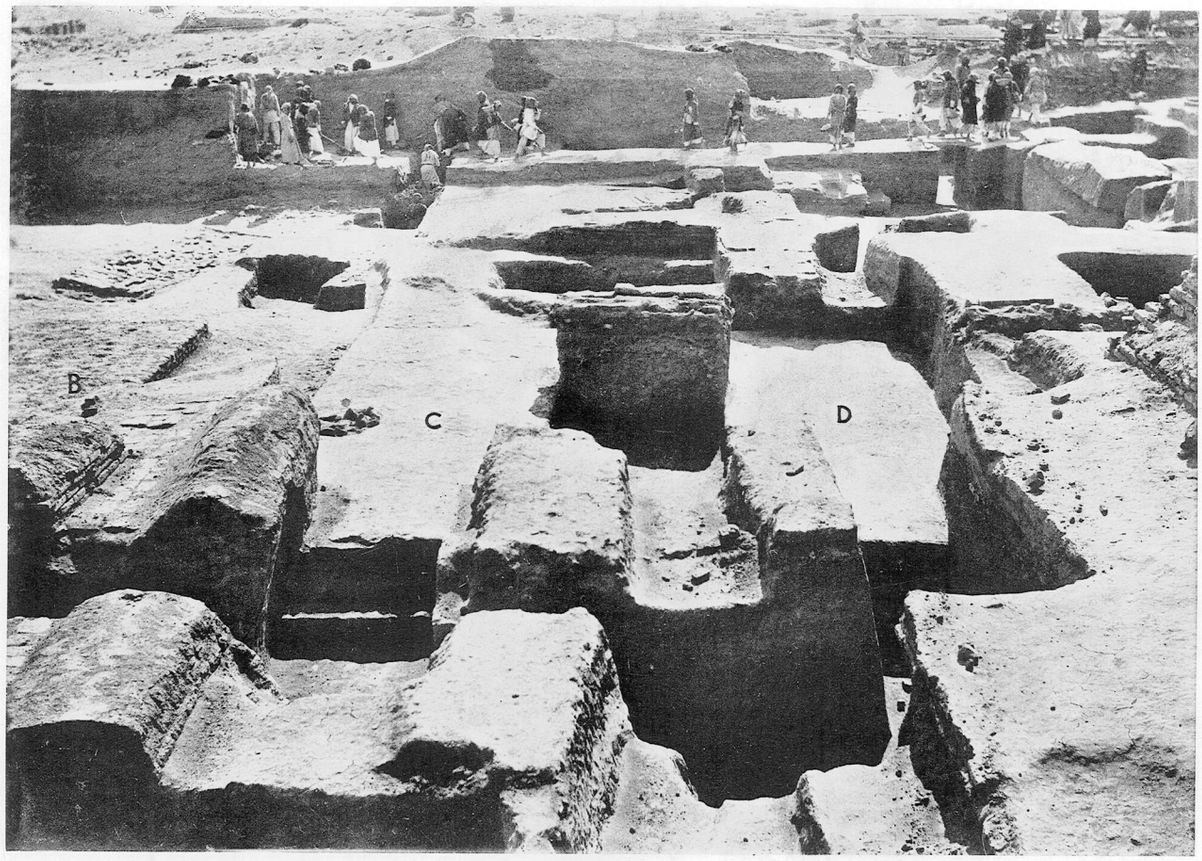
a. The exit of the drain in the SE. wall of courtyard BB, Archaic I: the stone-covered drain of the 3rd period, with older exits below. (*See p.* 16)



b. The drain exit after removal of upper work: the arched drain of the 2nd period, the older exit into the bitumen basin, and the bitumen 'apron' (A); at B, limestone face of the terrace wall, Archaic I. (*See p.* 16)

THE ZIGGURAT TERRACE

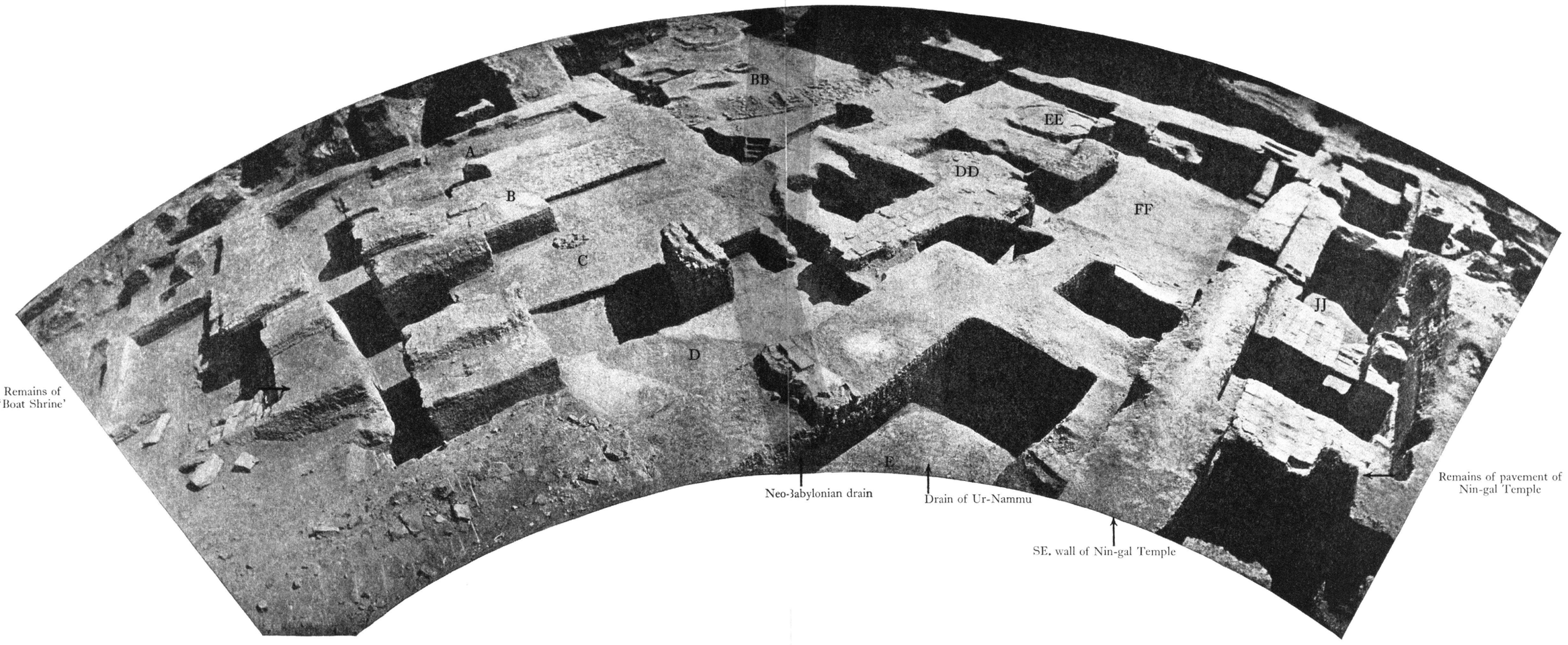
PLATE 8



a. View from the Ziggurat stair-buttress showing the First Dynasty shrines B, C, and D. (*See p.* 19)

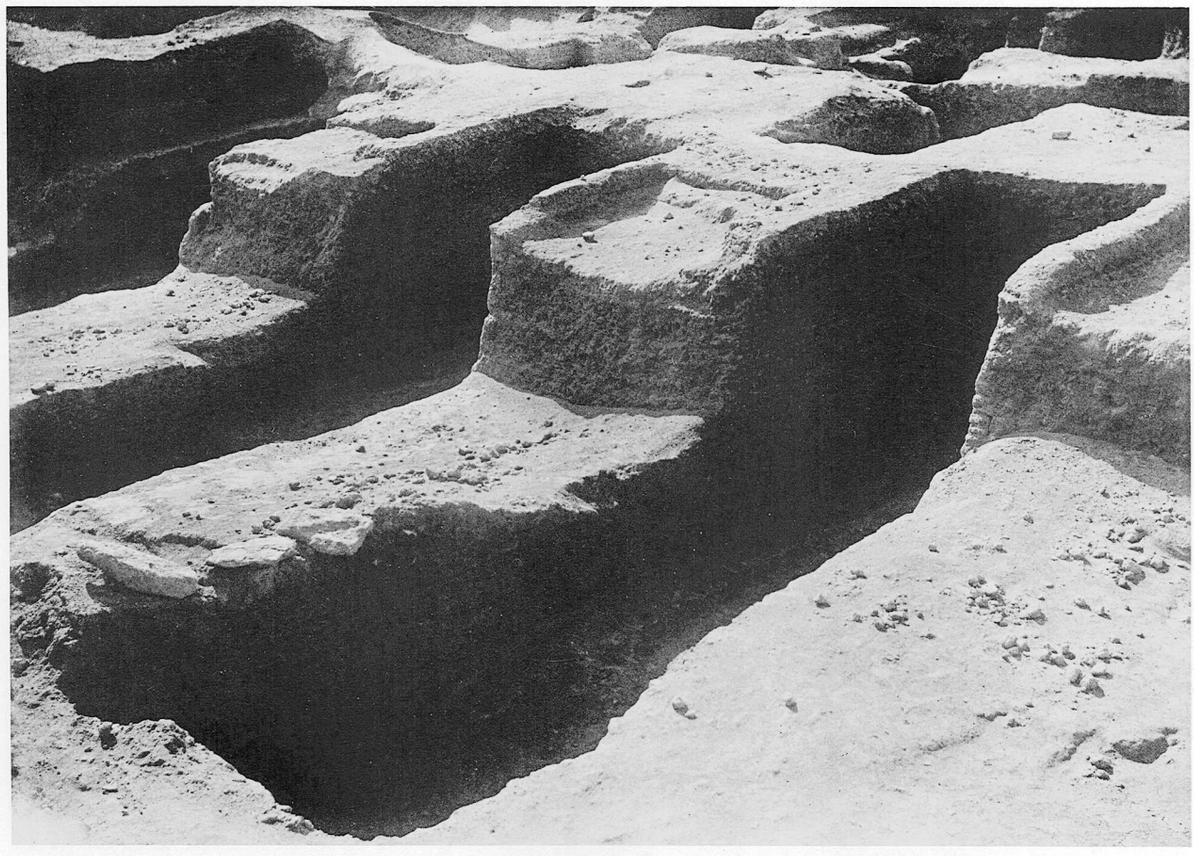
b. Shrine C, showing brick steps at entrance and bitumen-covered floor. (*See p.* 19)

THE ZIGGURAT TERRACE

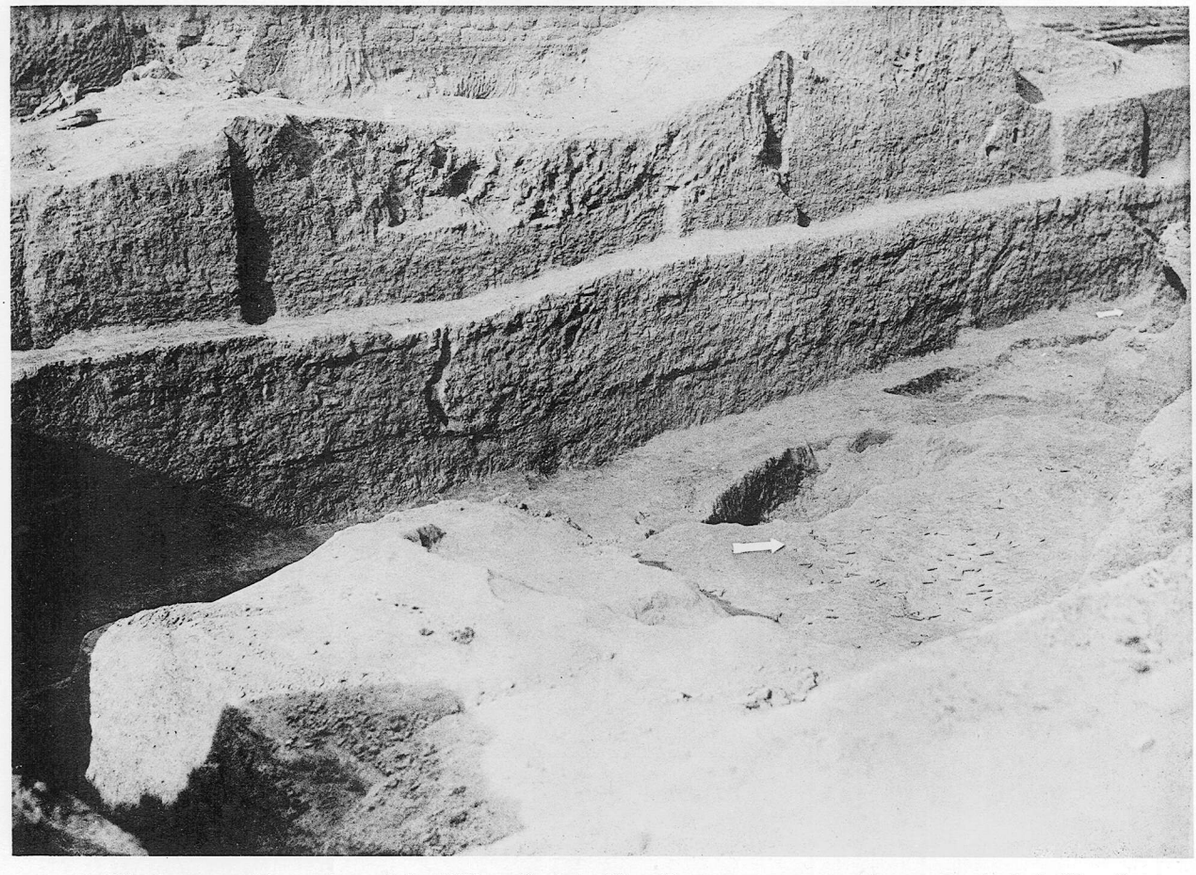


THE ZIGGURAT TERRACE

General view of the SE. buildings, Archaic I, seen from the Ziggurat. (*See p.* 17)



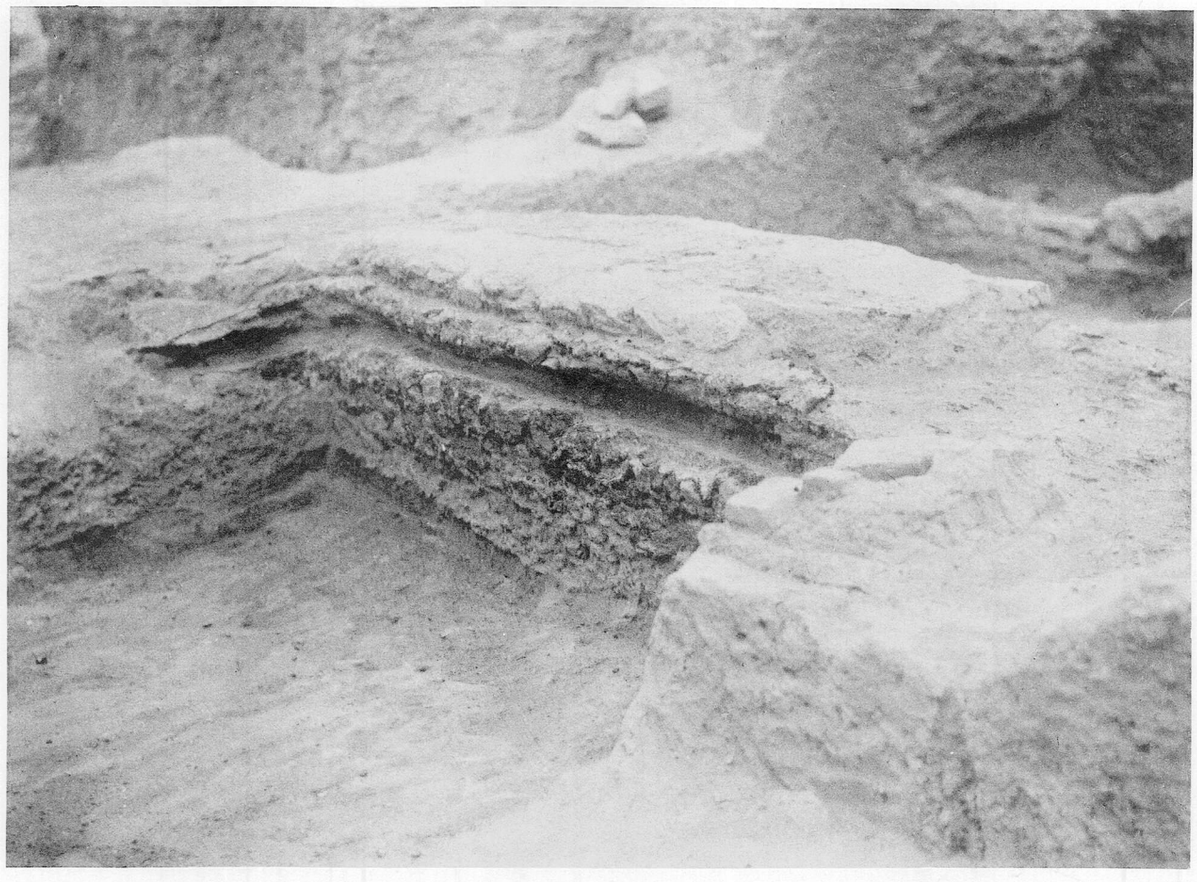
a. Long chambers on the NE. side of the Ziggurat terrace, N. end. The visible walls are of Period Archaic II. (*See p.* 20)



b. The buttressed inner face of the NW. wall of the First Dynasty terrace, resting on the Archaic II wall. Arrows point to deposits of cones on the Archaic III floor. (*See p.* 20)

THE ZIGGURAT TERRACE

a. The NW. 'kitchen' building, Archaic I: bitumen paving of the door-passage from the courtyard to room 1: at × a copper pot embedded in the bitumen against the wall-face (the walls have been dug away and are represented by pits). (*See p.* 21)



b. The same: bitumen-coated floor of passage between rooms 1 and 2, showing the three levels due to repairs, and brick and stone imposts by the doors. (*See p.* 21)

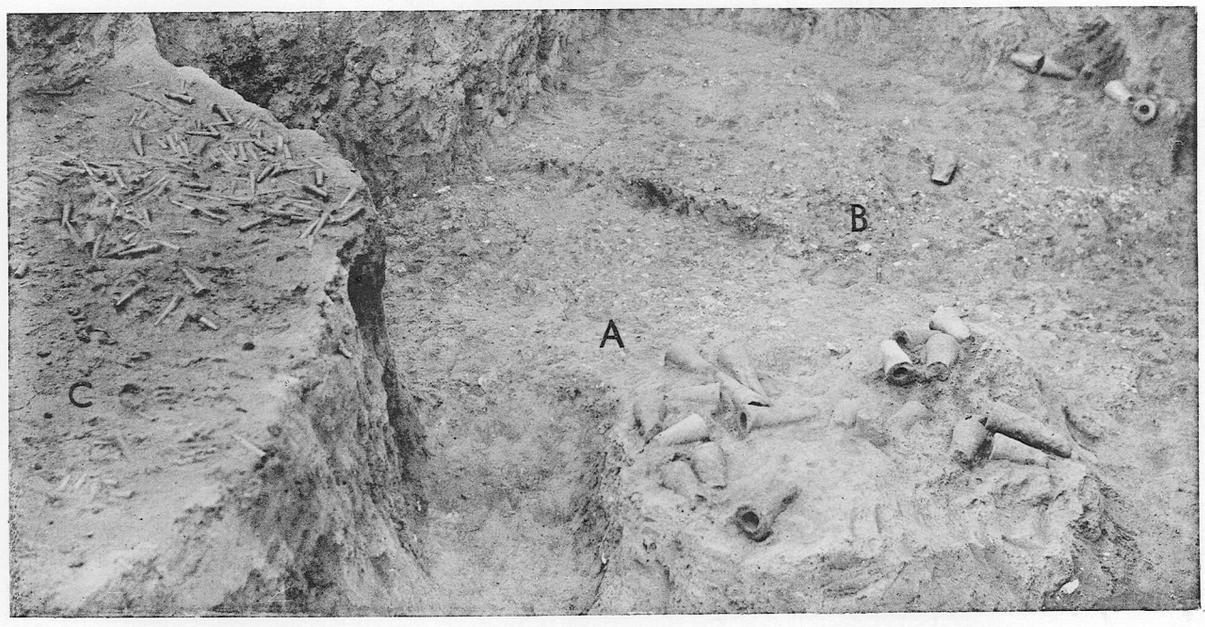
THE ZIGGURAT TERRACE

a. The NW. 'kitchen' building, Archaic I, room 2: A, the 'basin'; B, burnt-brick paving; C, mud-brick wall-foundations of Ur-Nammu; D, burnt-brick foundation-box of Nur-Adad cut down into the Third Dynasty brickwork. (*See pp.* 21, 38)

b. The buttressed inner face of the NW. wall of the First Dynasty terrace (A . . . A) resting on (B . . . B), the older Archaic II wall; C, remains of Archaic II B platform. Arrows point to deposits of wall-mosaic cones. (*See pp.* 3, 5)

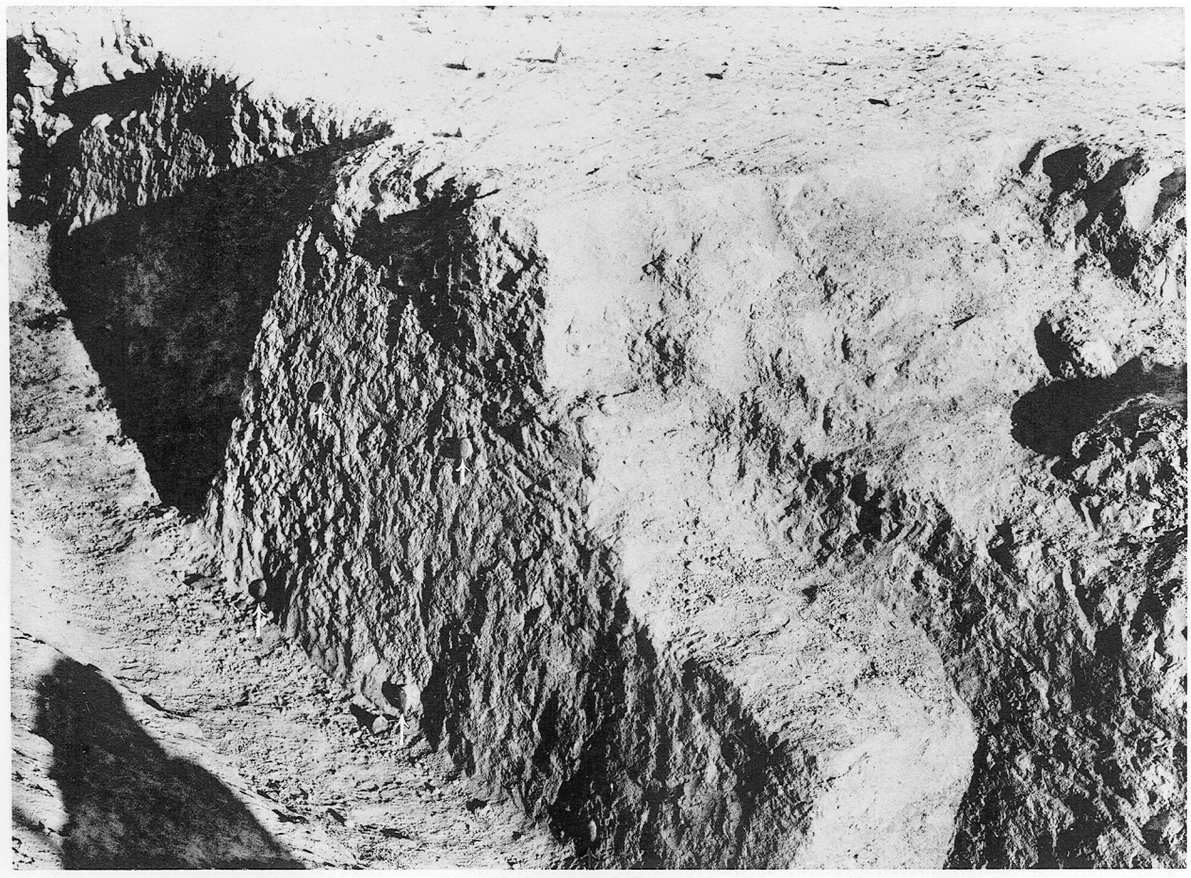
THE ZIGGURAT TERRACE

a. A, revetment-wall, Archaic IV; B, terrace wall, Archaic III; C, terrace wall, inner face, Archaic II; D, upper platform, Archaic II B. (*See p.* 5)



b. Deposits of wall-mosaic cones: A, large type associated with lime floor (B), period Archaic IV; C, small type at higher level, period Archaic III. (*See p.* 6)

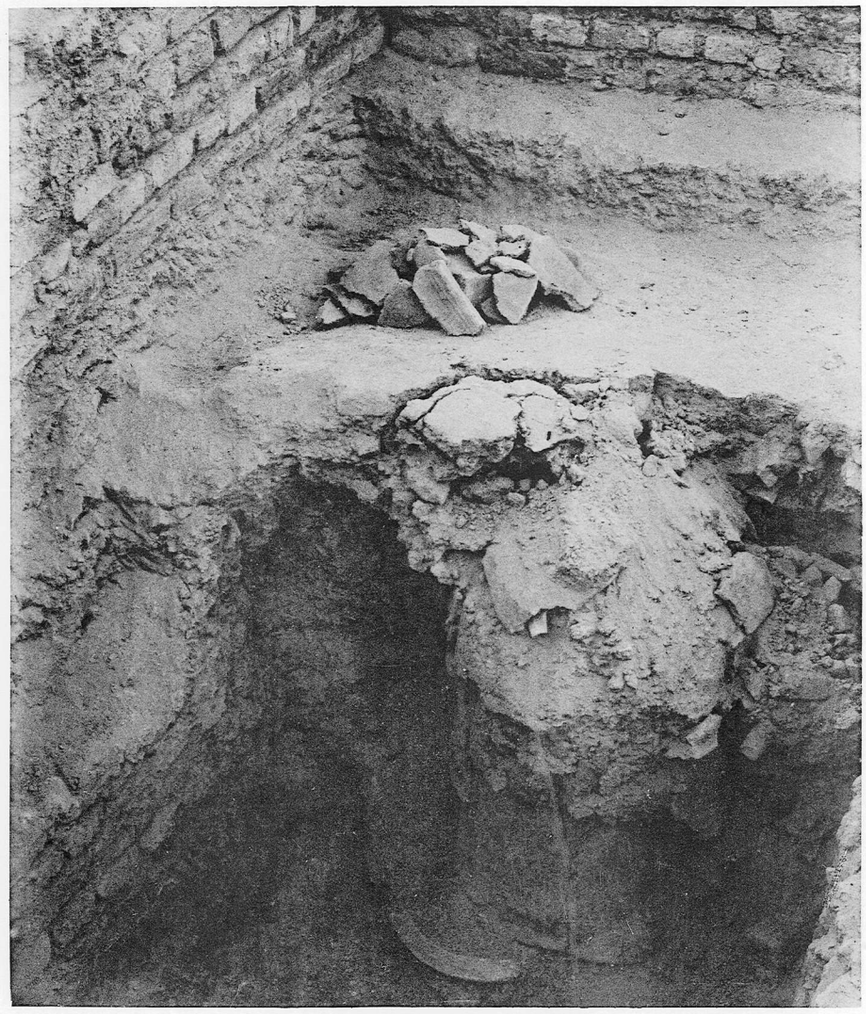
THE ZIGGURAT TERRACE



a. The terrace wall of Ur-Nammu, NW. side: arrows show position of foundation-cones. (*See p.* 24)

b. The terrace wall of Ur-Nammu, NW. side: general view. (*See p.* 24)

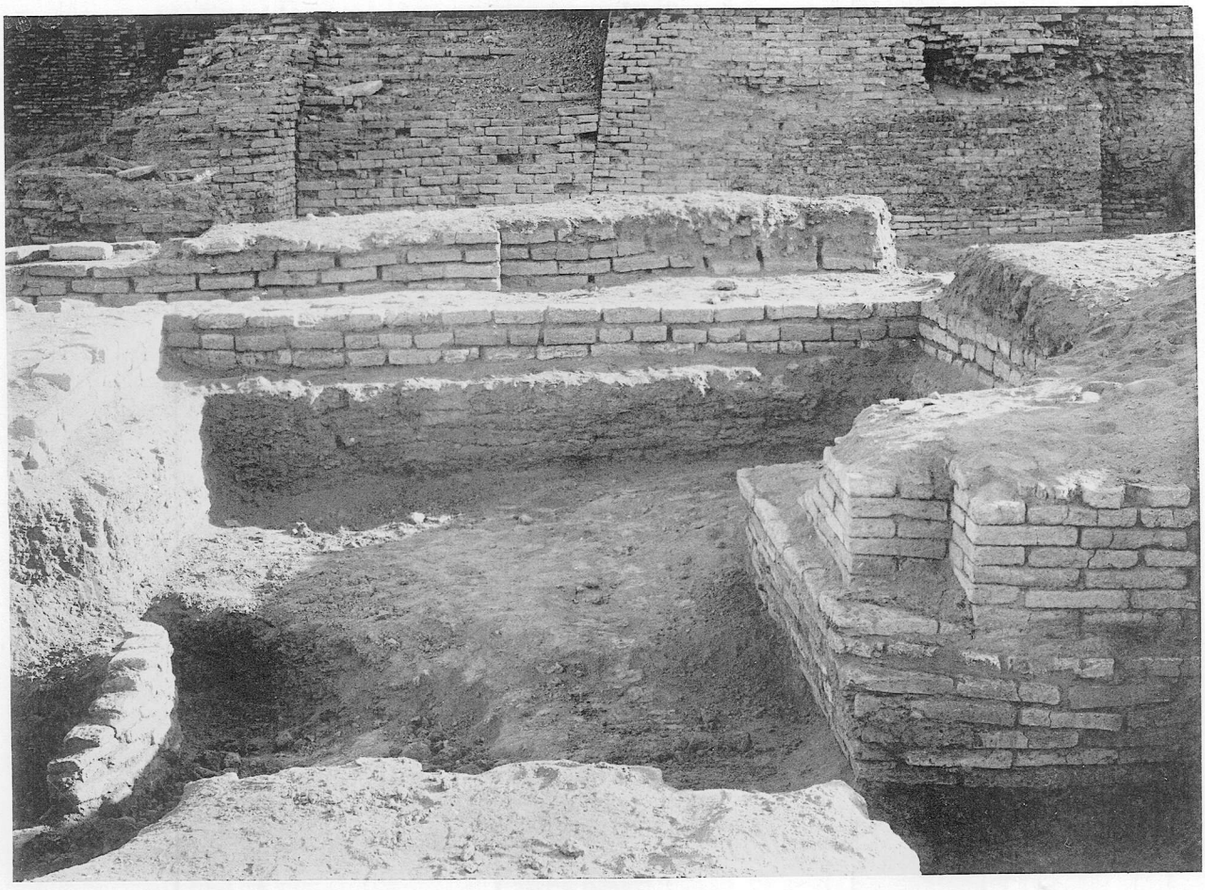
THE ZIGGURAT TERRACE



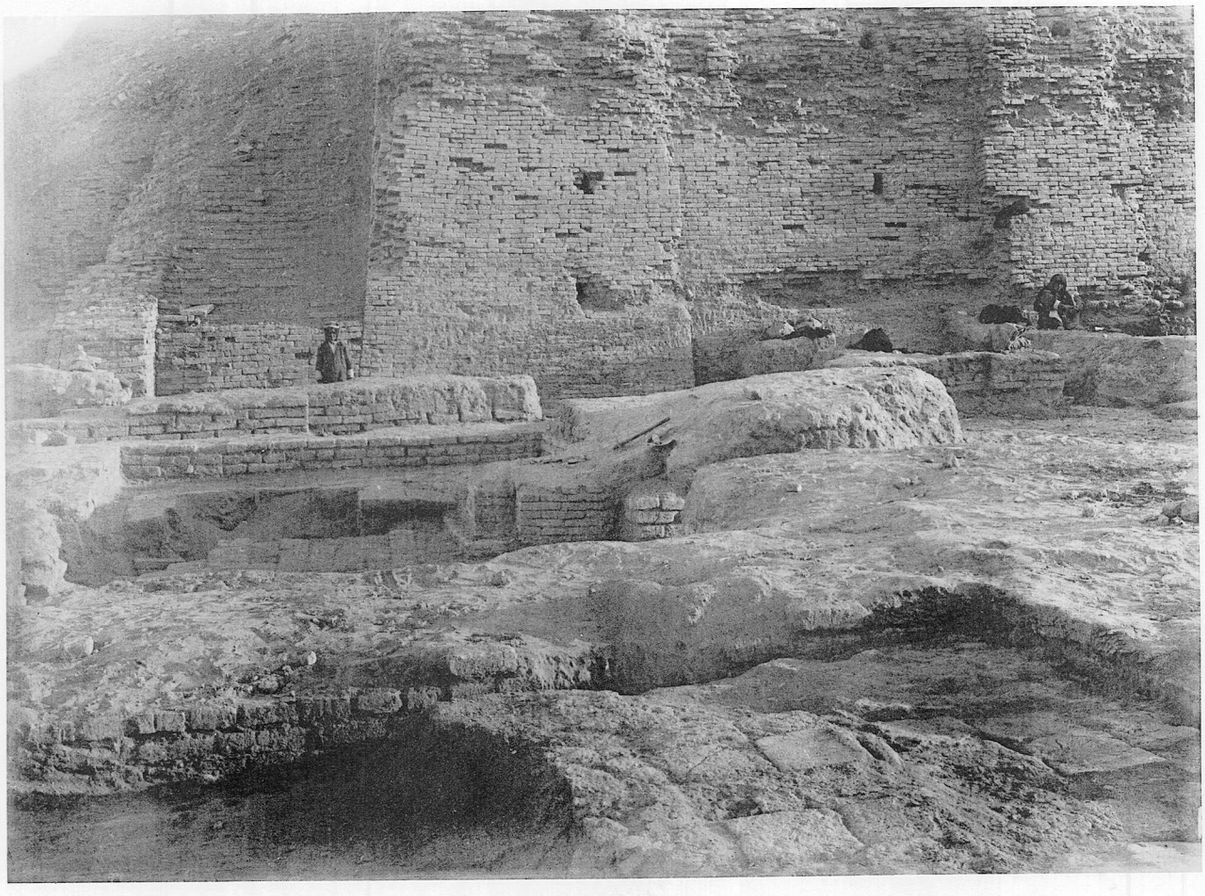
a. Third Dynasty drain in corner of room 3, NW. building range. (*See p.* 31)

b. Copper hinge-shoe and socket-stone of Ur-Nammu *in situ* in room 4, NW. building range. (*See p.* 31)

THE ZIGGURAT TERRACE



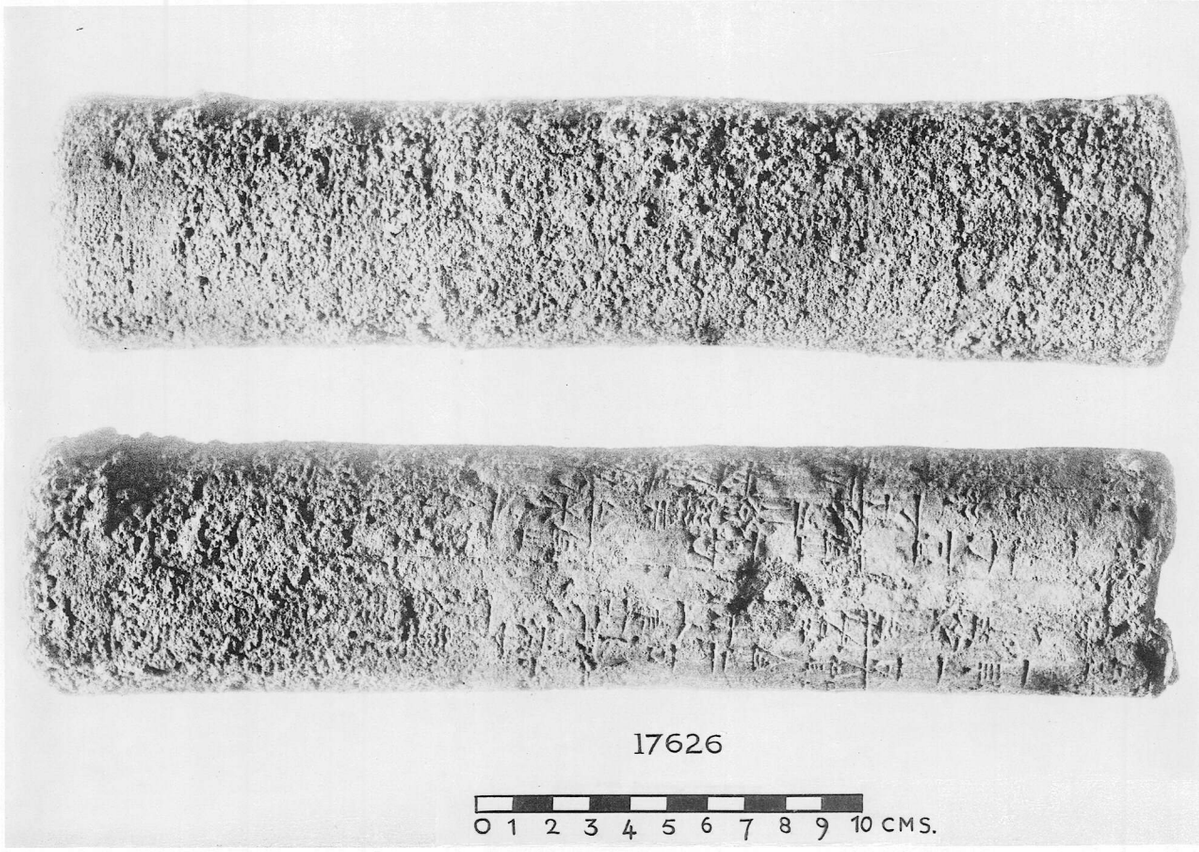
a. North corner buildings; the Kassite walls built over those of the Third Dynasty. (*See p.* 37)



b. North corner buildings; Kassite pavement and walls with Third Dynasty remains beneath. (*See p.* 50)

THE ZIGGURAT TERRACE

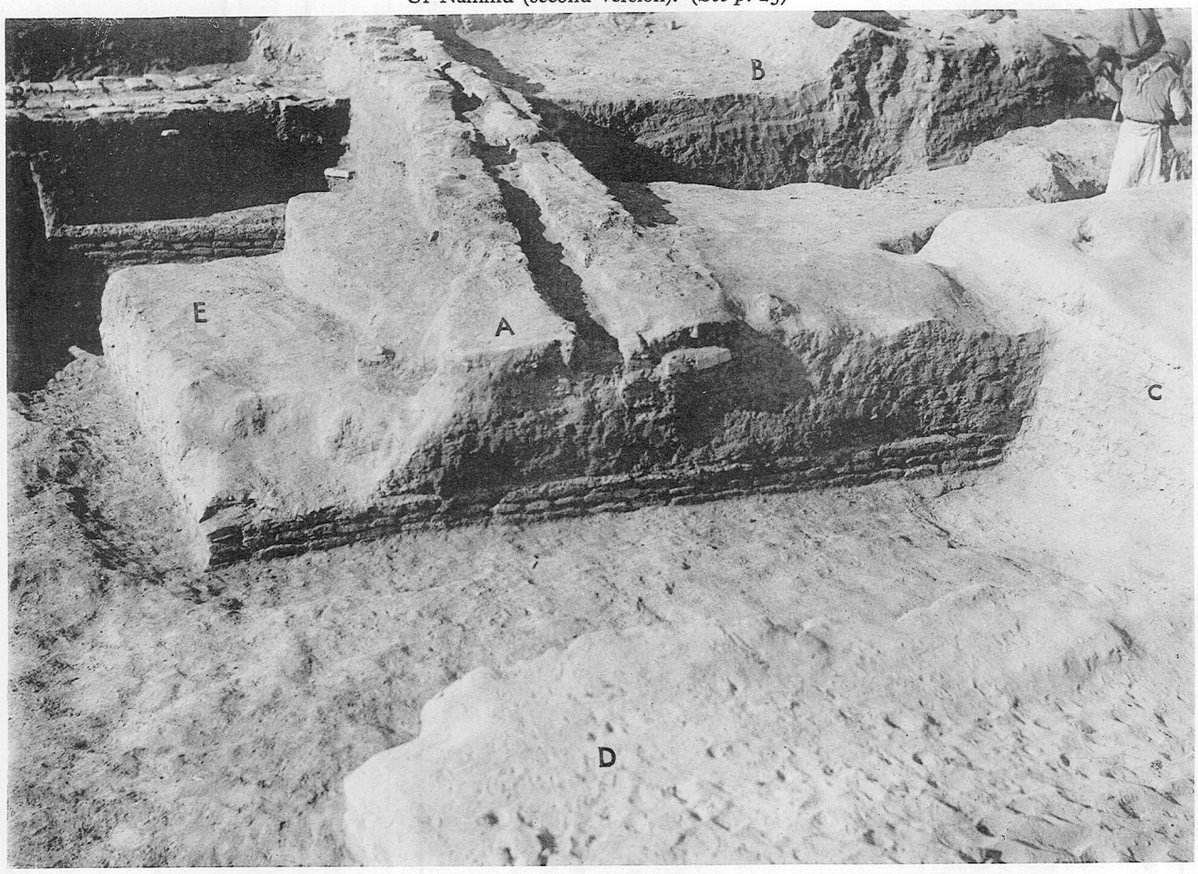
a. North corner building; foundation-box of Nur-Adad with cylinders in position. (*See p.* 38)



b. Copper cylinders of Nur-Adad. (*See p.* 38)

THE ZIGGURAT TERRACE

a. The entrance through the SE. wall of the Third Dynasty terrace: A, A, walls of Ur-Nammu (with Kassite brickwork above); B, gate-socket box of later date; C, stairs of Ur-Nammu's first design, afterwards buried beneath pavement of second version; D, copper hinge-pole, and E, walls and floor of Archaic I passage; F, hinge-box with socket-stone of Ur-Nammu (second version). (*See p.* 25)



b. A, drain of Nabonidus; B, drain of Ur-Nammu; C, section of mud-brick terrace filling of Ur-Nammu; D, E, the second and third First Dynasty shrines. (*See p.* 34)

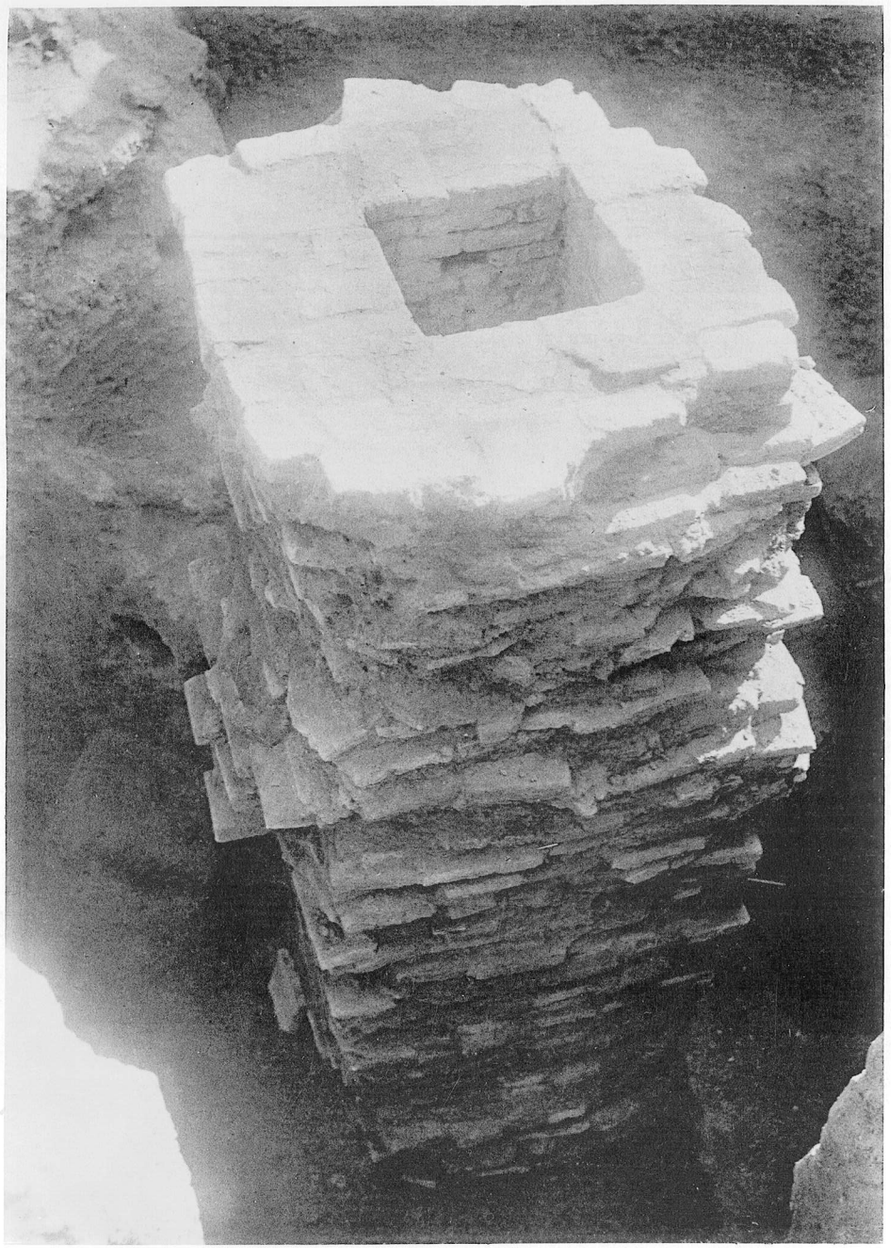
THE ZIGGURAT TERRACE

a. The stone-filled altar-foundation: A, A, Ur-Nammu floor; B . . . B, wall of Second Dynasty (?); above, remains of the Nabonidus 'Boat Shrine', C, C. (*See p.* 34)

b. The drain of Ur-Nammu running through the SW. terrace wall. (*See p.* 29)

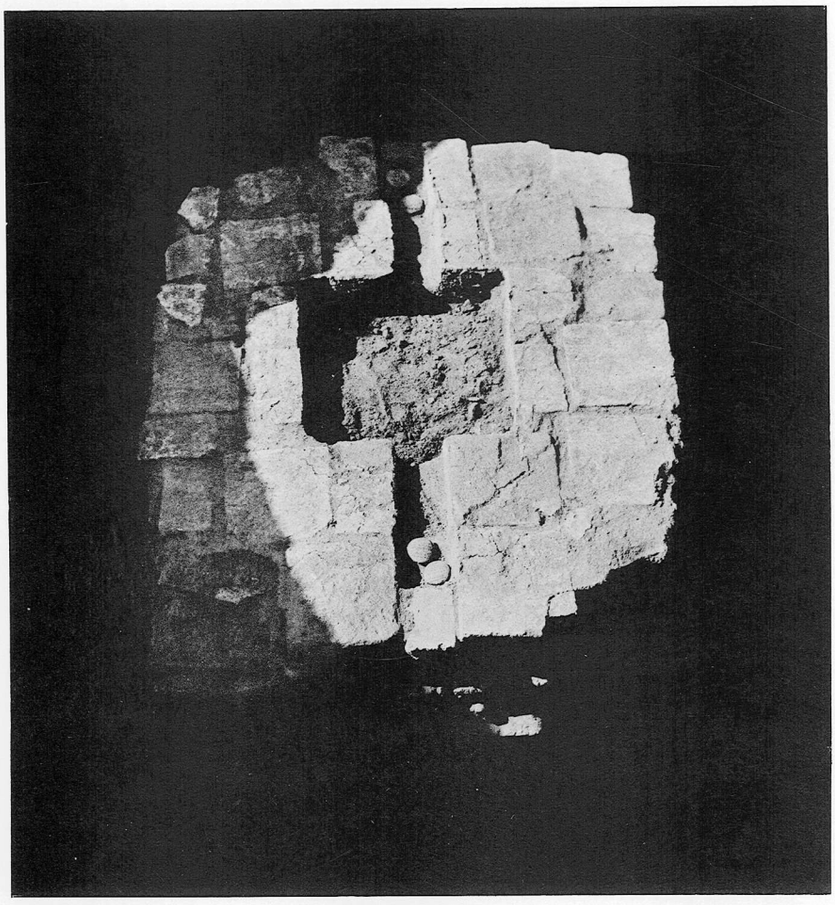
THE ZIGGURAT TERRACE

a. Ur-Nammu's cistern. (*See p.* 34)

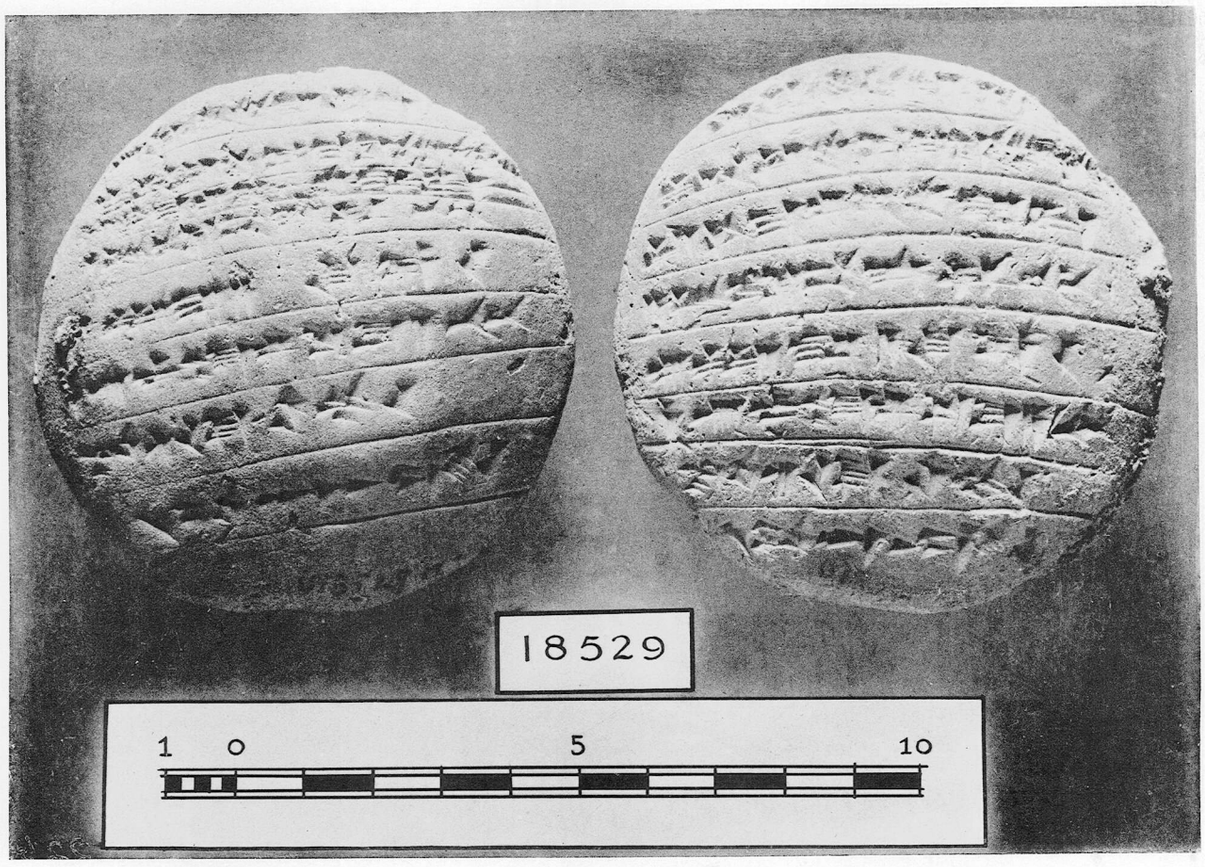


b. The well in the Nin-gal Temple court. (*See p.* 32)

THE ZIGGURAT TERRACE

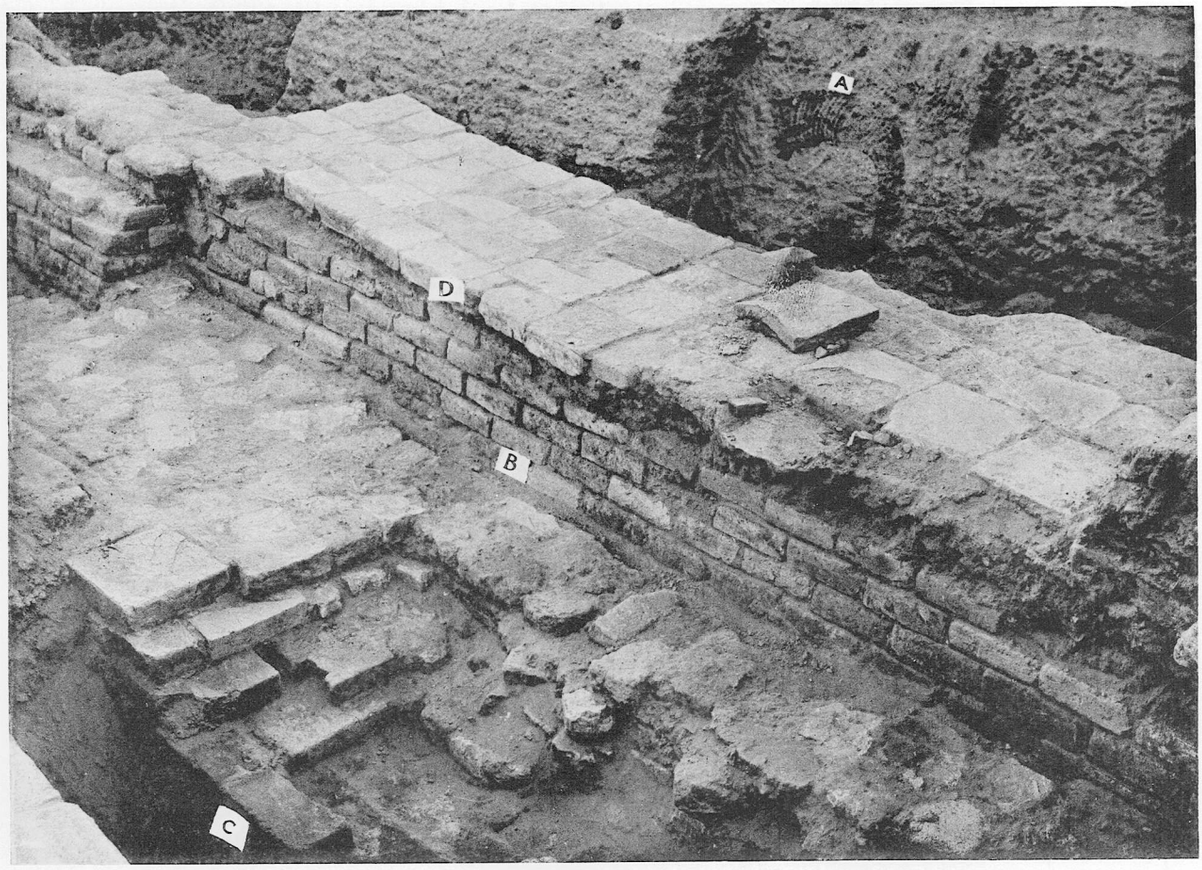


a. The Nin-gal well: upper courses of brickwork removed, showing foundation-tablets. (*See p.* 33)

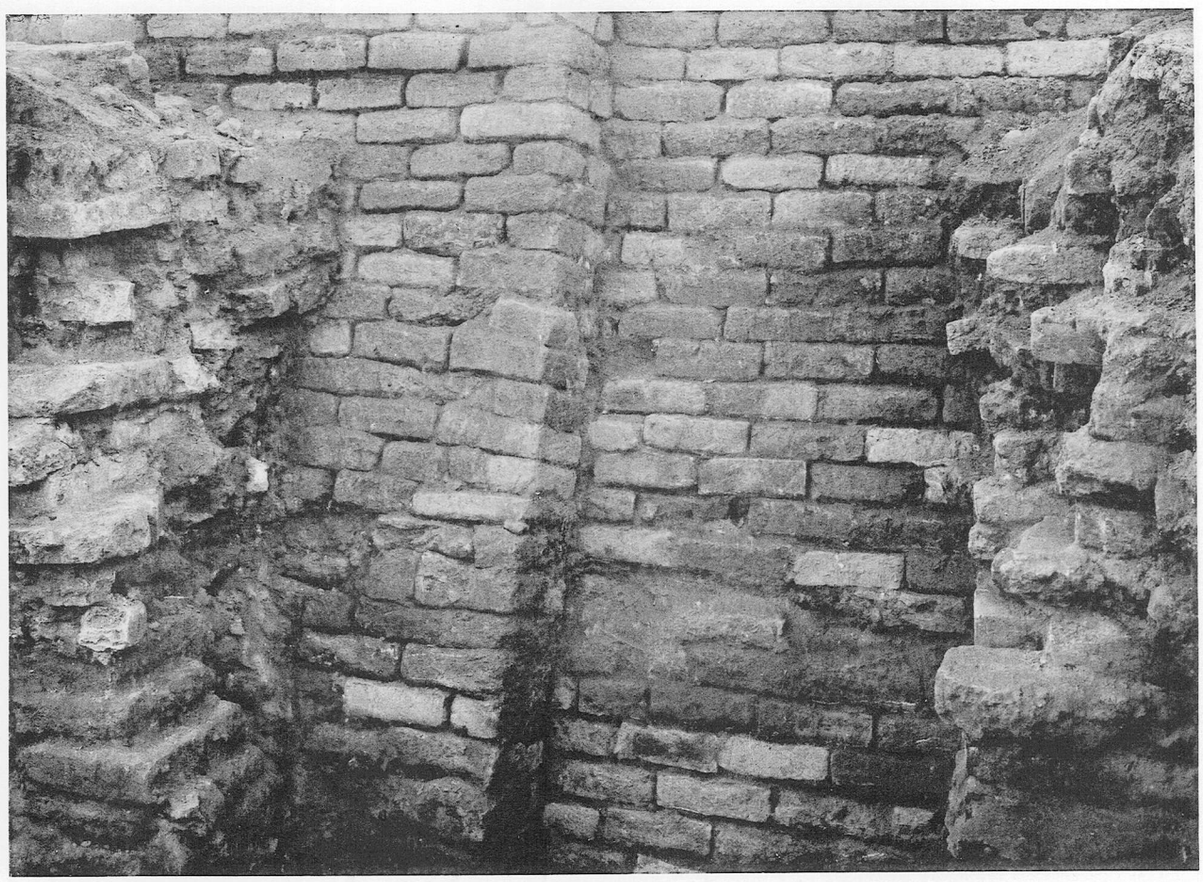


b. Foundation-tablets of Sin-balatsu-iqbi from the Nin-gal well. (*See p.* 33)

THE ZIGGURAT TERRACE

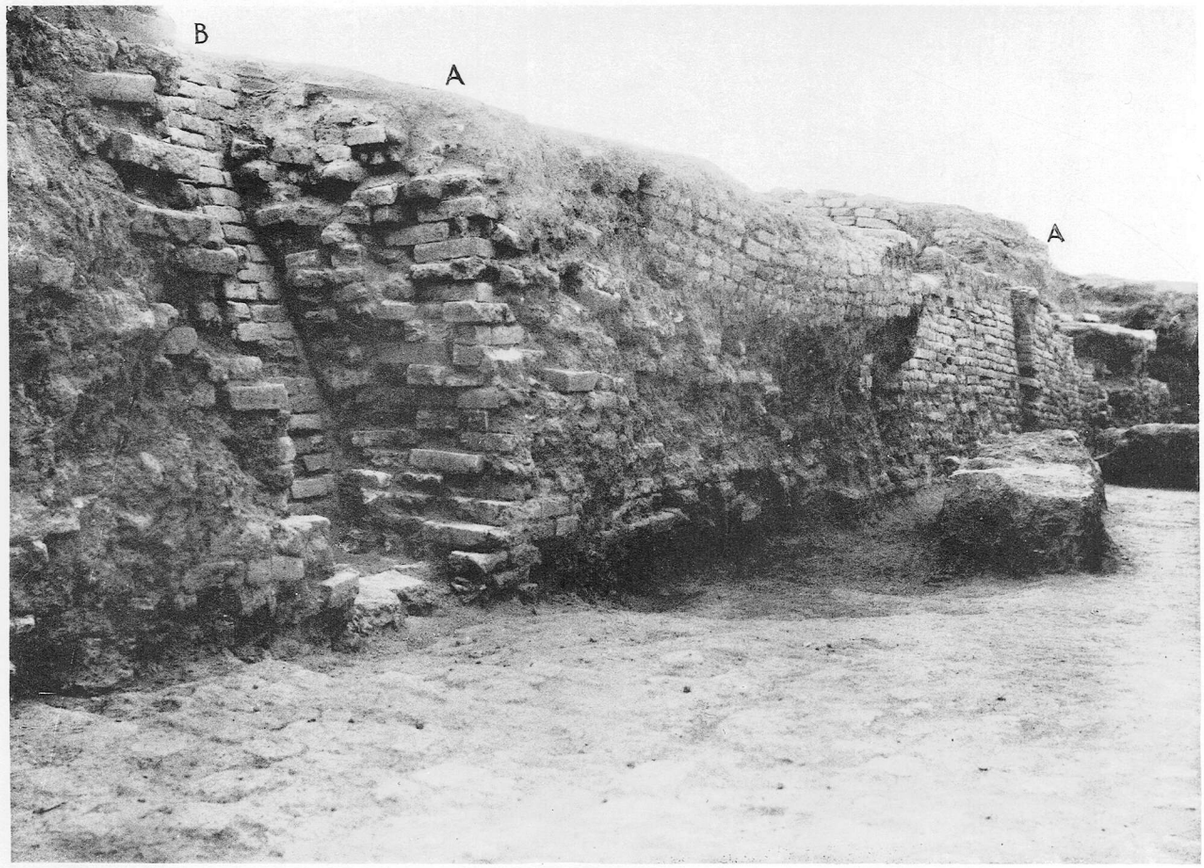


a. The NW. retaining-wall: A, mud-brick wall of Ur-Nammu; B, Larsa revetment; C, revetment of Kuri-Galzu; D, pavement of Sin-balatsu-iqbi (?). (*See pp.* 40, 49)

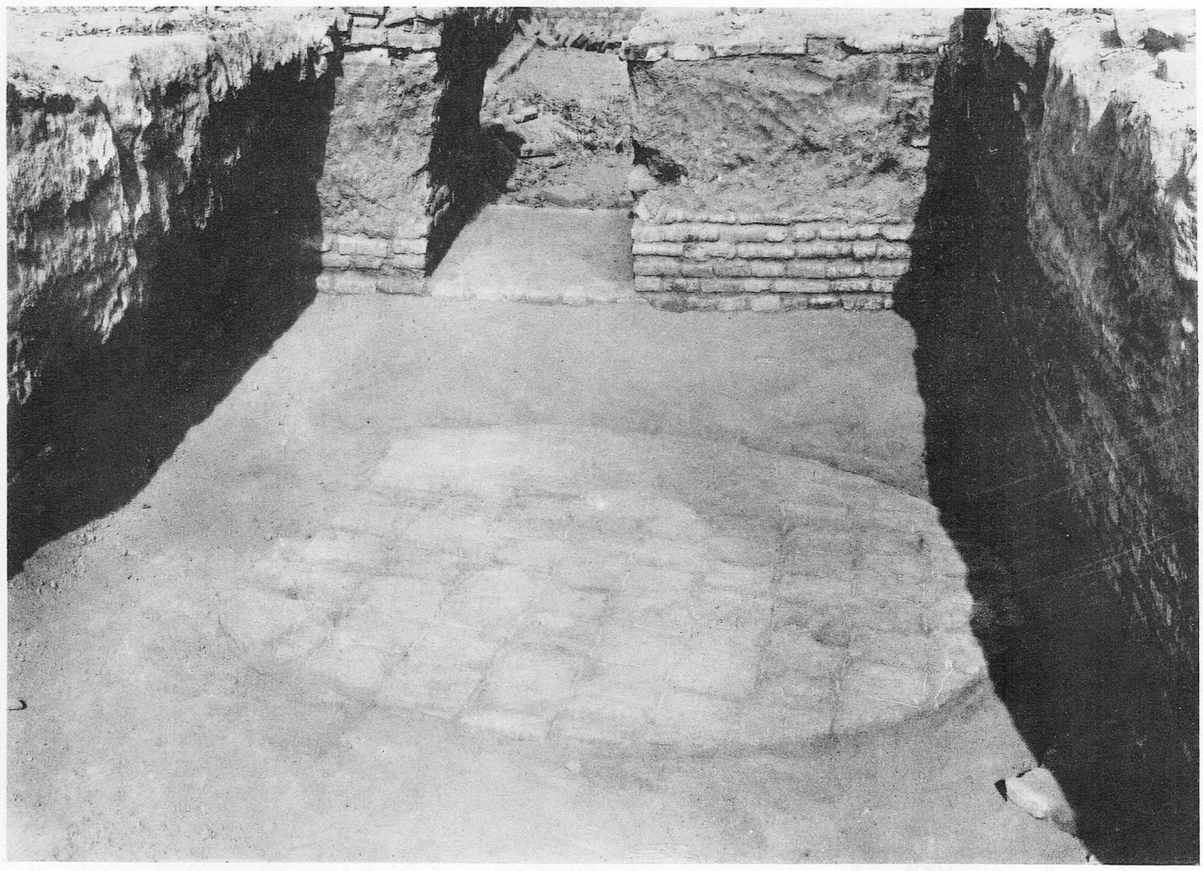


b. The NW. retaining-wall: the revetment of Kuri-Galzu removed to show the Larsa façade. (*See pp.* 40, 49)

THE ZIGGURAT TERRACE



a. The NW. retaining-wall of Kuri-Galzu's revetment. (*See p.* 49)



b. The SE. wall: intramural chamber in the Kassite range, with circular brick base. (*See p.* 51)

THE ZIGGURAT TERRACE

a. The Nin-gal Temple: drain in room 9. (*See pp.* 61, 64)

b. The Nin-gal Temple of Kuri-Galzu: altar in niche in room 8. (*See p.* 56)

THE ZIGGURAT TERRACE

a. General view of the Neo-Babylonian Temple of Nin-gal, looking NW. (*See p.* 60)

b. The Neo-Babylonian Temple of Nin-gal, looking SW.: the raised sanctuary in the background. (*See p.* 60)

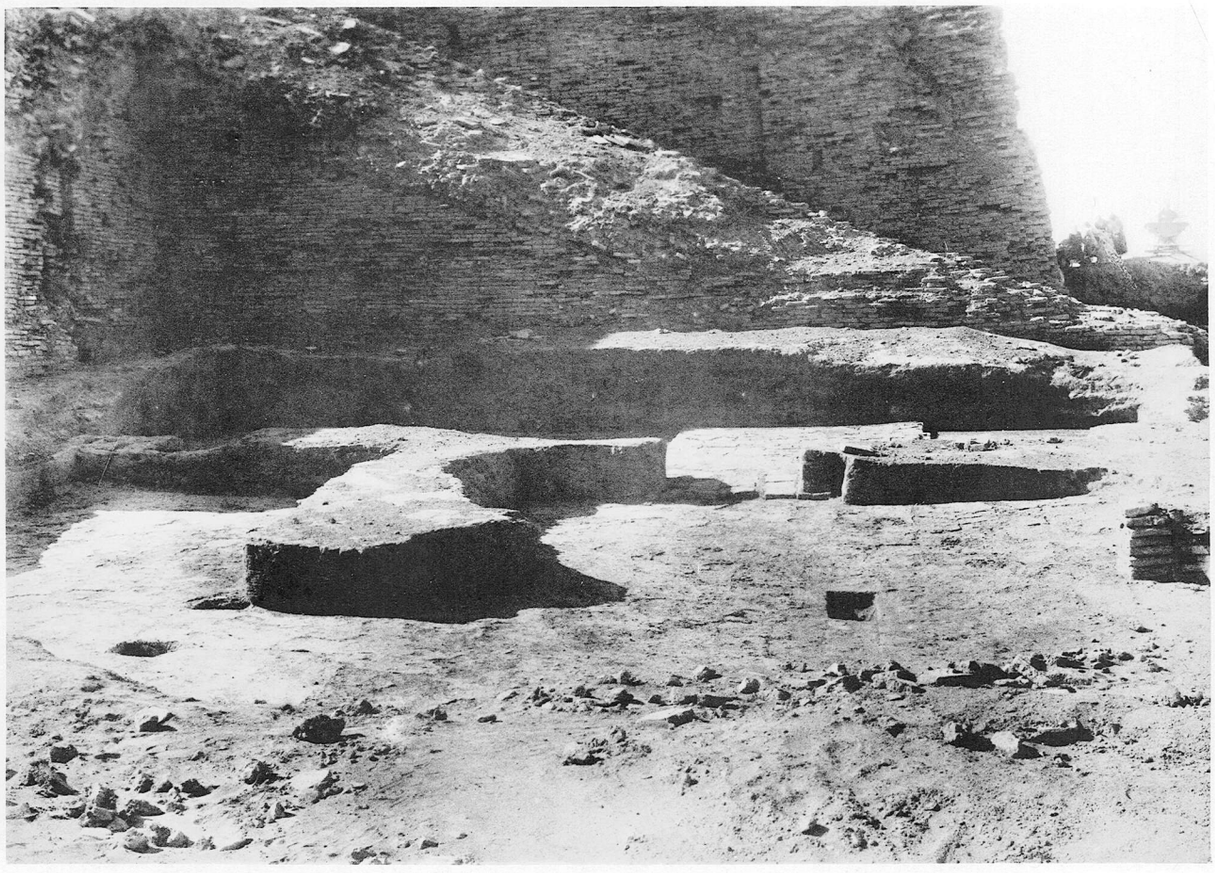
THE ZIGGURAT TERRACE

a. The Nin-gal Temple of Nabonidus: the steps leading to the sanctuary. (*See p.* 60)

b. The Nin-gal Temple: foundation-cones of Sin-balatsu-iqbi in position. (*See p.* 63)

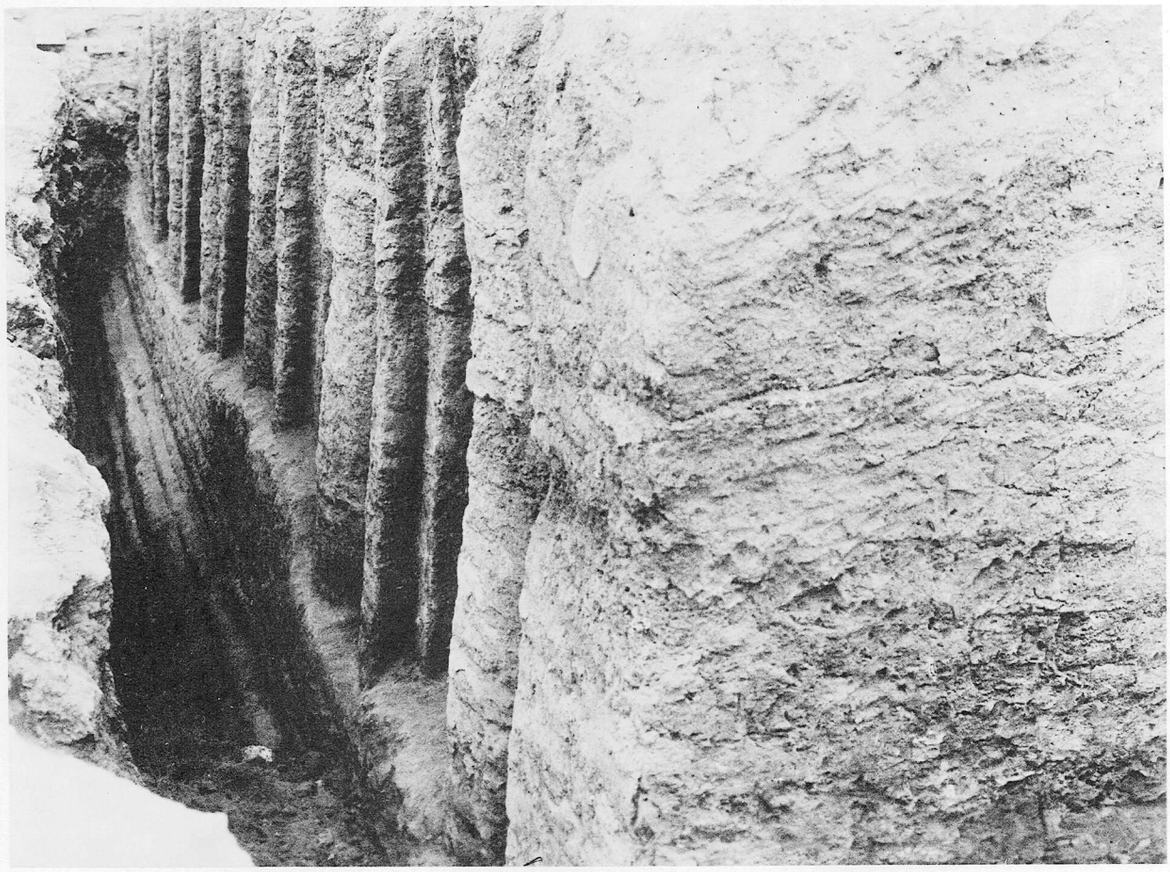
THE ZIGGURAT TERRACE

a. The SW. side, showing Kassite drains and wall-remains. (*See p.* 53)



b. The Neo-Babylonian shrine of Nannar. (*See p.* 69)

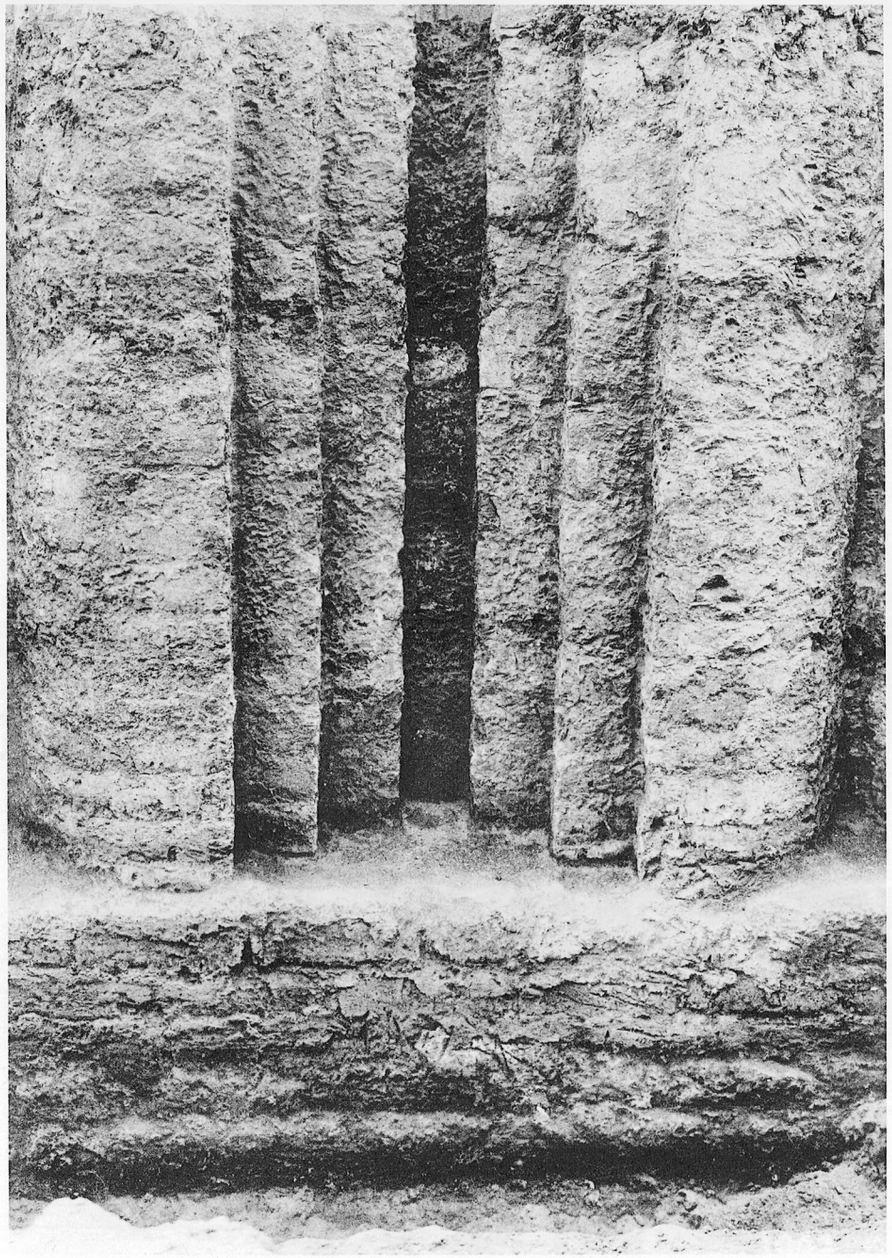
THE ZIGGURAT TERRACE



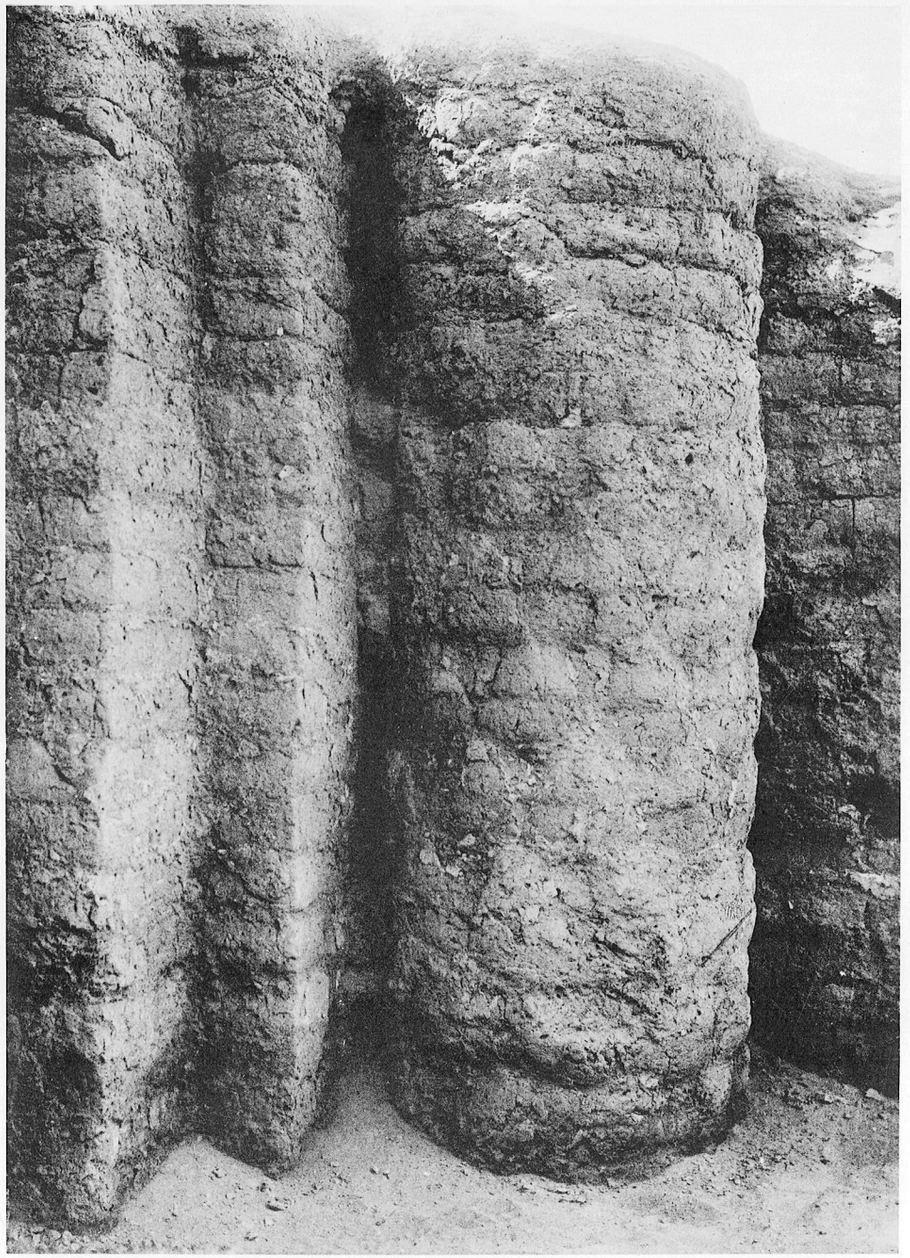
a. The bastion of Warad-Sin, showing foundation-cones in position in the wall. (*See p.* 43)

b. The same: front view. (*See p.* 44)

THE ZIGGURAT TERRACE



a. The Bastion of Warad-Sin: detail of half-column construction. (*See p.* 42)



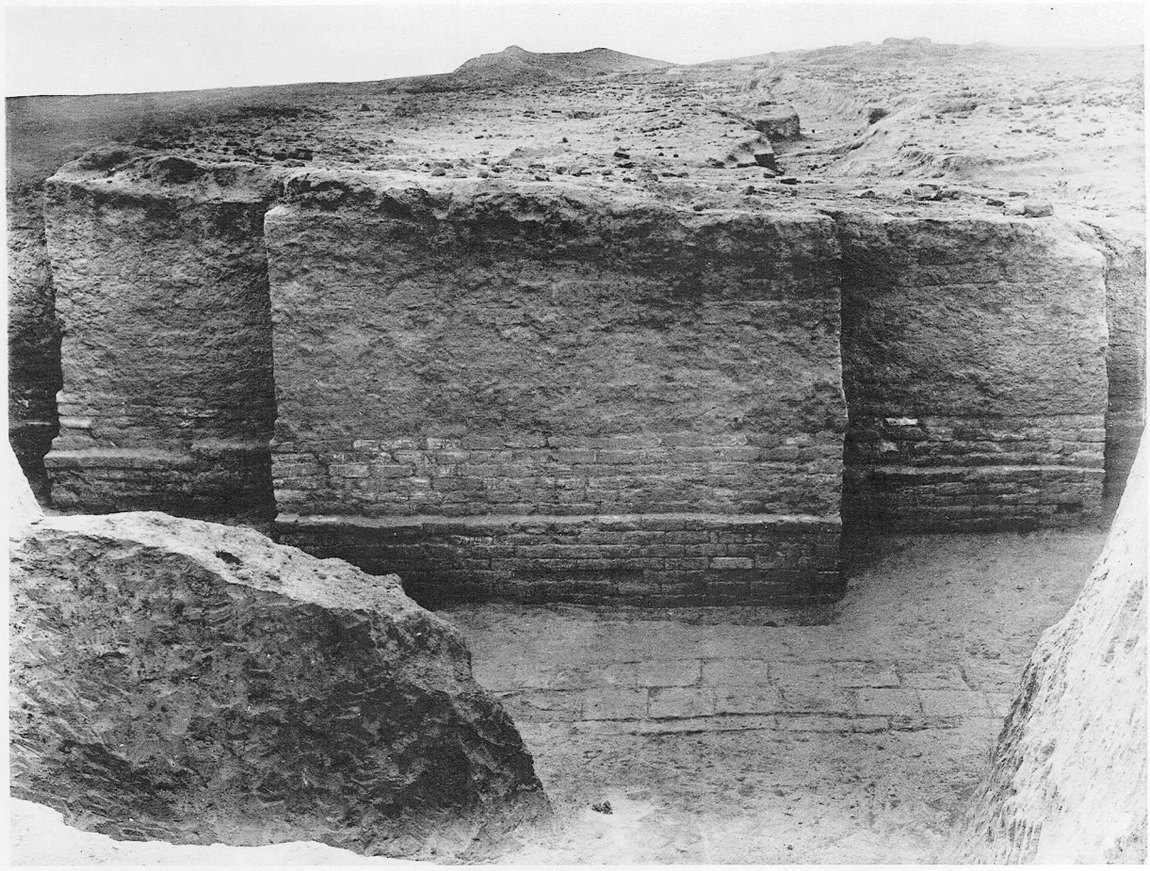
b. The same: decorated column in mud-brick. (*See p.* 42)

THE ZIGGURAT TERRACE

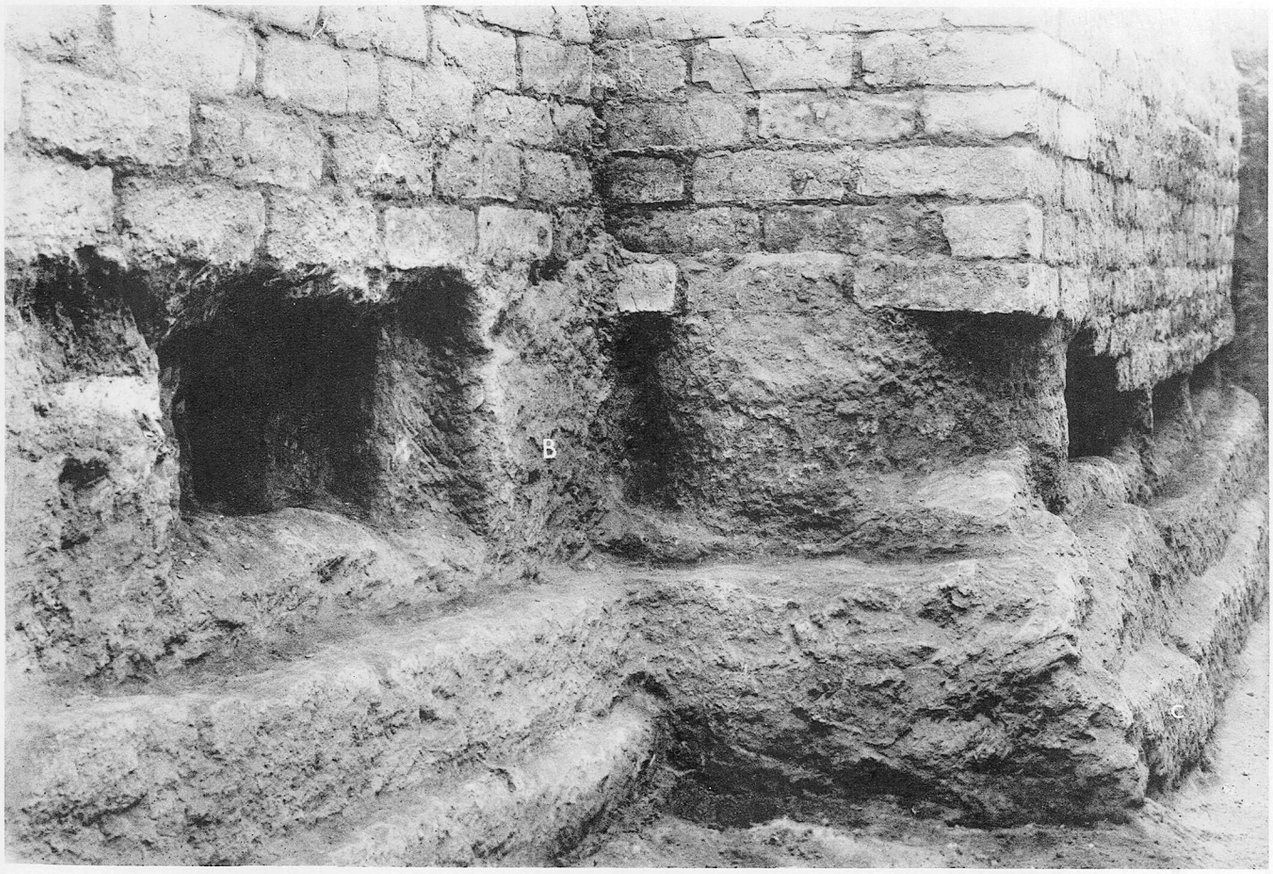
a. The staircase of Kuri-Galzu in Warad-Sin's Bastion. (*See p.* 49)

b. The Warad-Sin Bastion: foundation-cones *in situ* in the core of the wall. (*See p.* 43)

THE ZIGGURAT TERRACE

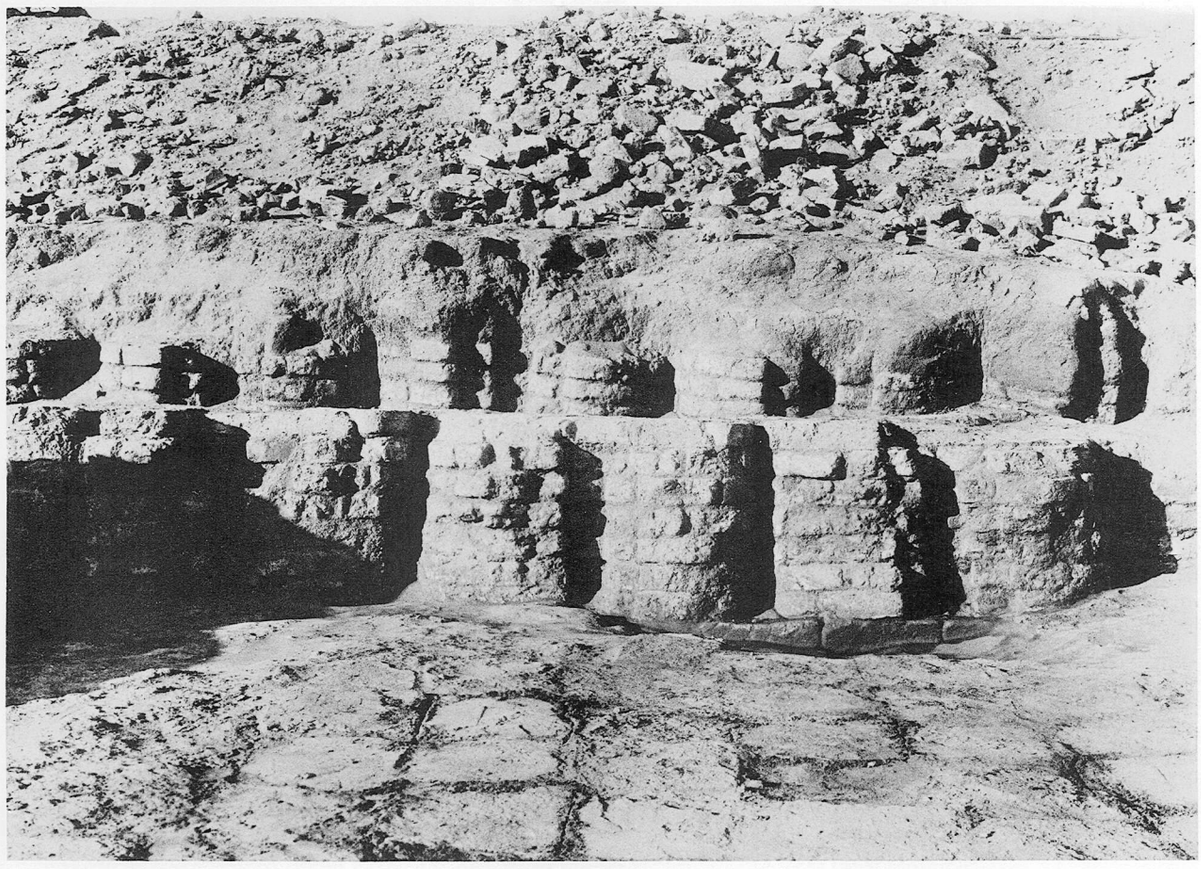


a. The NW. retaining-wall of the Nannar courtyard built by Kuri-Galzu: outer face. (*See p.* 88)



b. The E. corner of the Nannar courtyard: the outer wall-face showing: A, the burnt-brickwork of Kuri-Galzu; B, the half-column construction of Warad-Sin; and C, earlier foundations. (*See p.* 82)

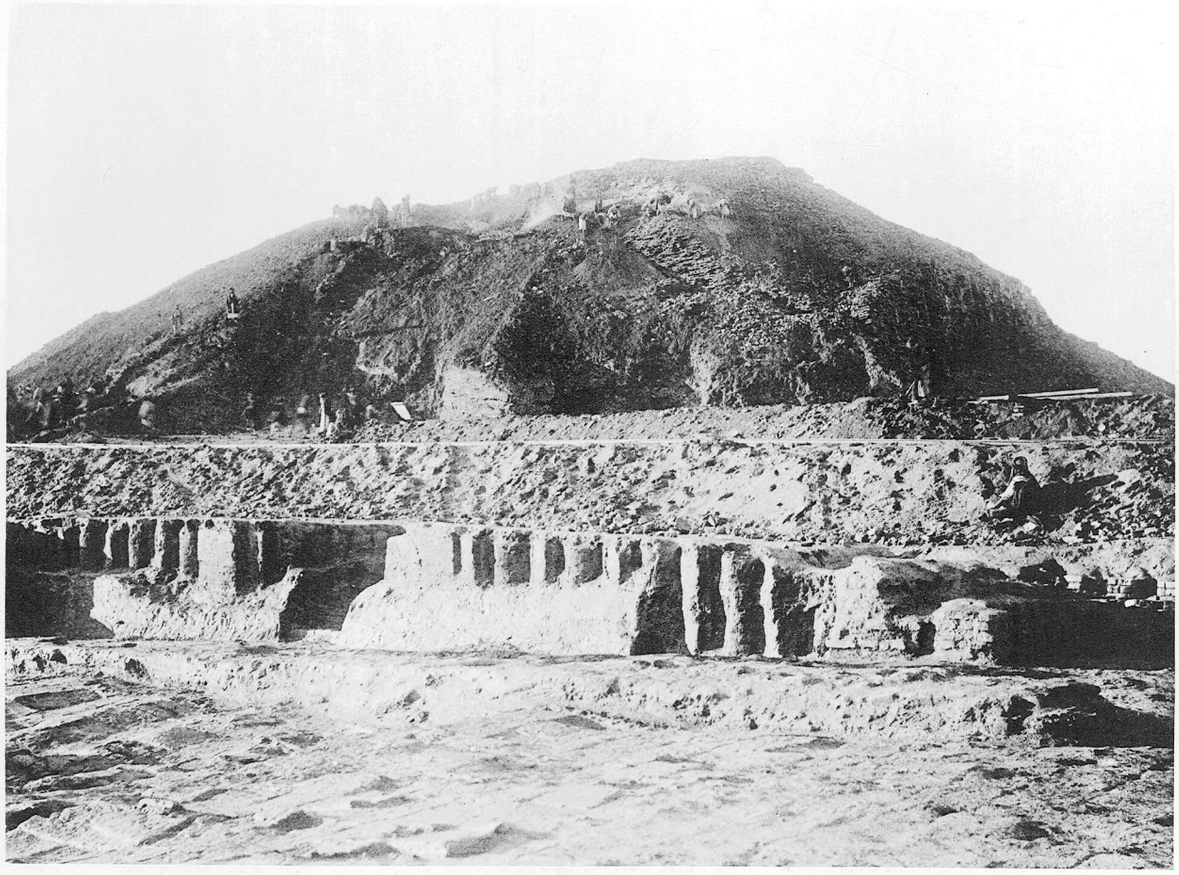
THE NANNAR COURT



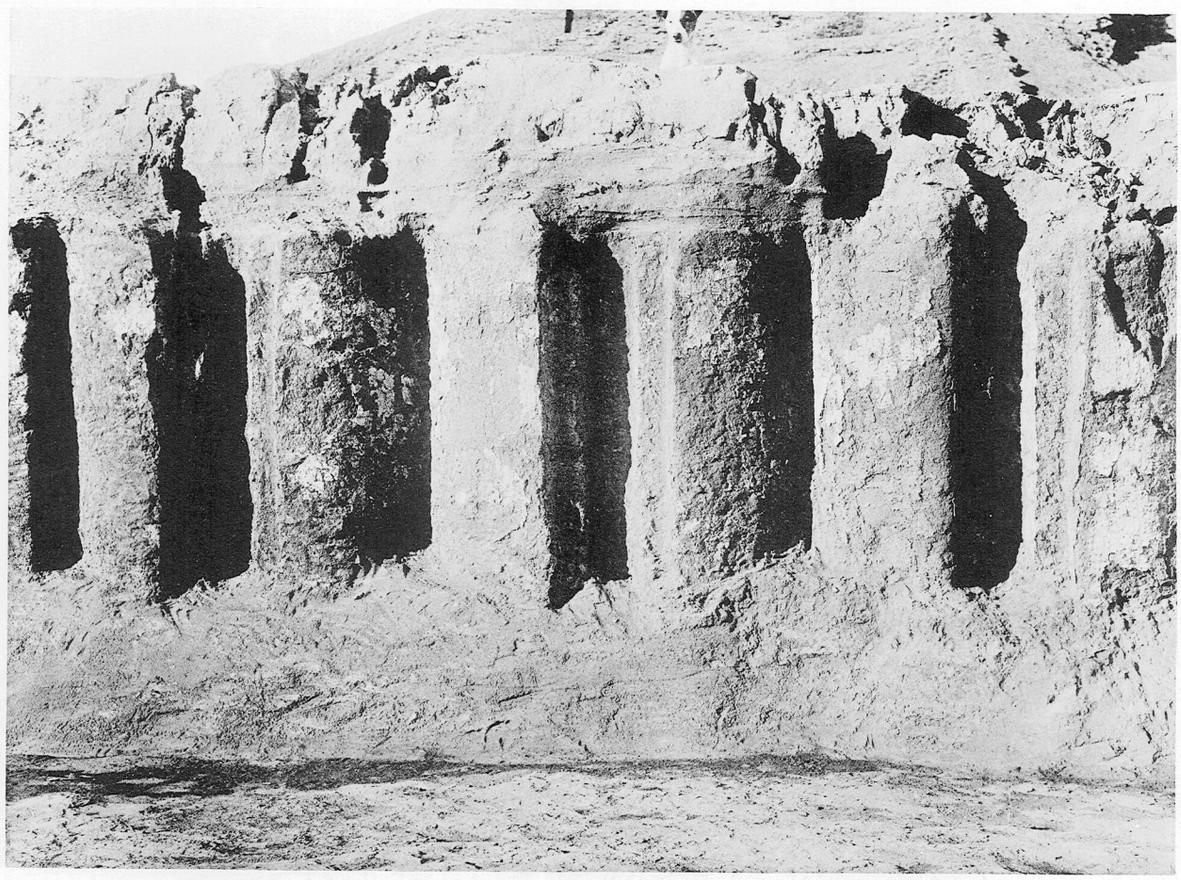
a. The SW. side: the half-columned walls of Kuri-Galzu and Sin-balatsu-iqbi. (*See p.* 89)

b. The same: the mud-brick half-columned wall of Sin-balatsu-iqbi. (*See p.* 89)

THE NANNAR COURT

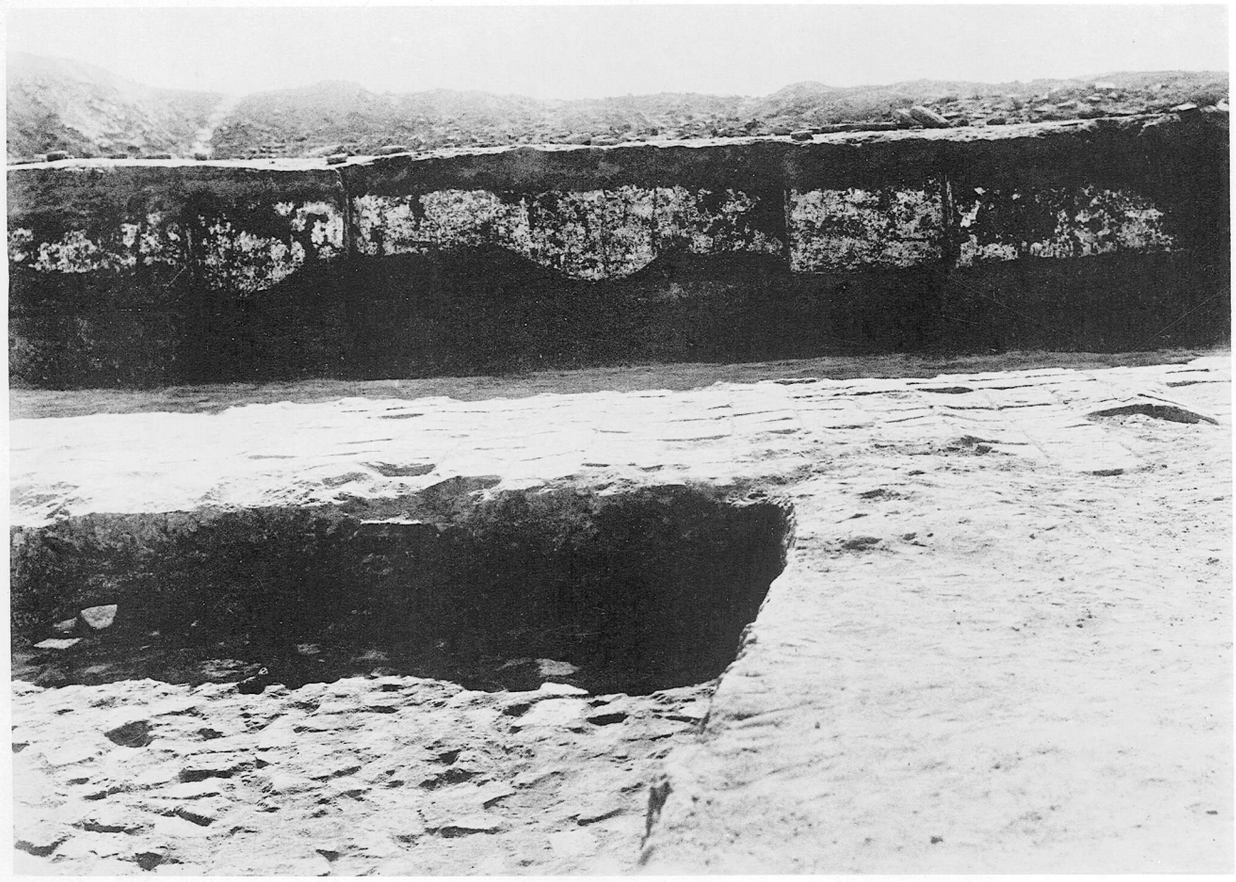


a. The Nannar courtyard: the Kassite pavement and walls of Sin-balatsu-iqbi



b. Detail of the SW. mud-brick wall, showing traces of whitewash. (*See p*. 89)

THE NANNAR COURT

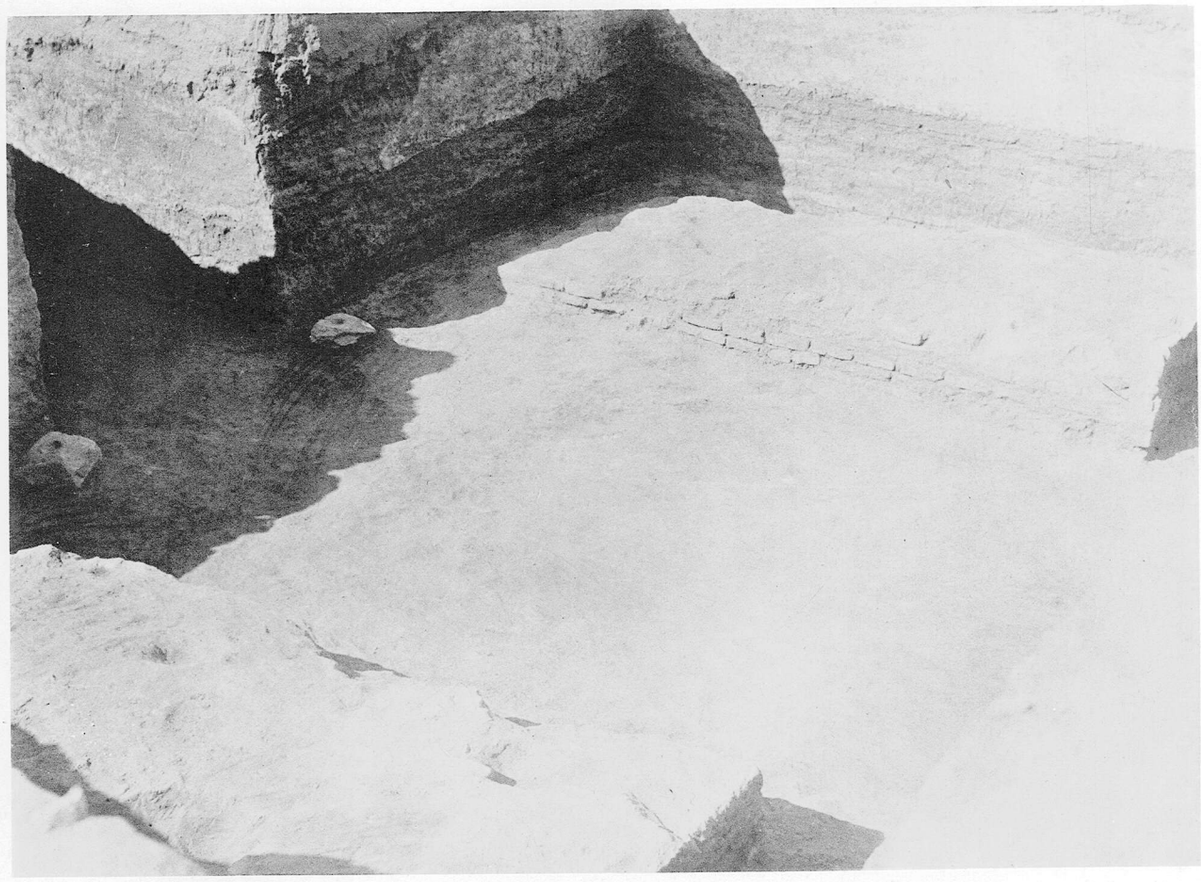


a. The SE. end: in the foreground the 'sunken area'. (*See p.* 80)

b. The same, showing the patches in the pavement; above is the Nebuchadnezzar drain. (*See p.* 80)

THE NANNAR COURT

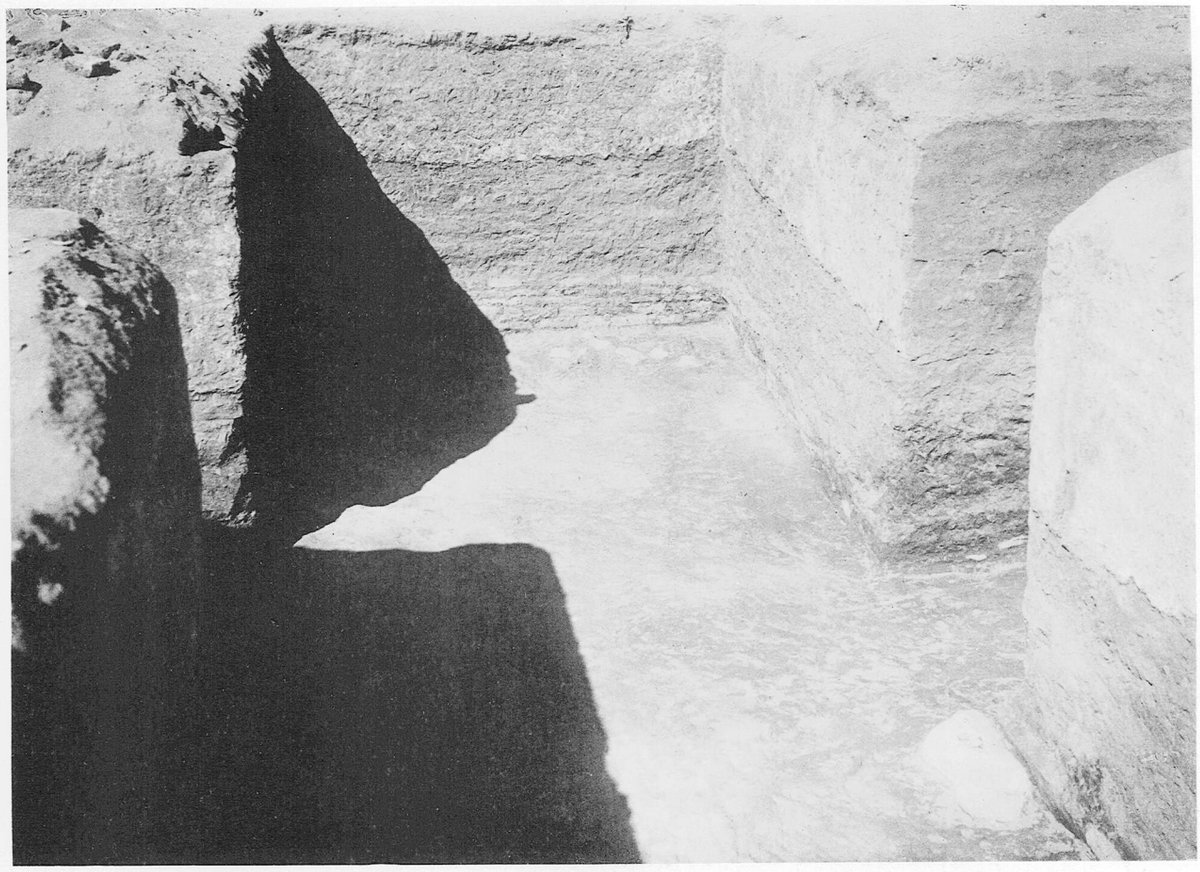
a. The entrance-passage, Kassite period. (*See p*. 90)



b. The outer guard-chamber (room 1), Kassite period. (*See p*. 90)

THE NANNAR COURT

a. The triple entrance of the Kassite period. (*See p.* 90)



b. Room 2 of the Kassite period. (*See p.* 90)

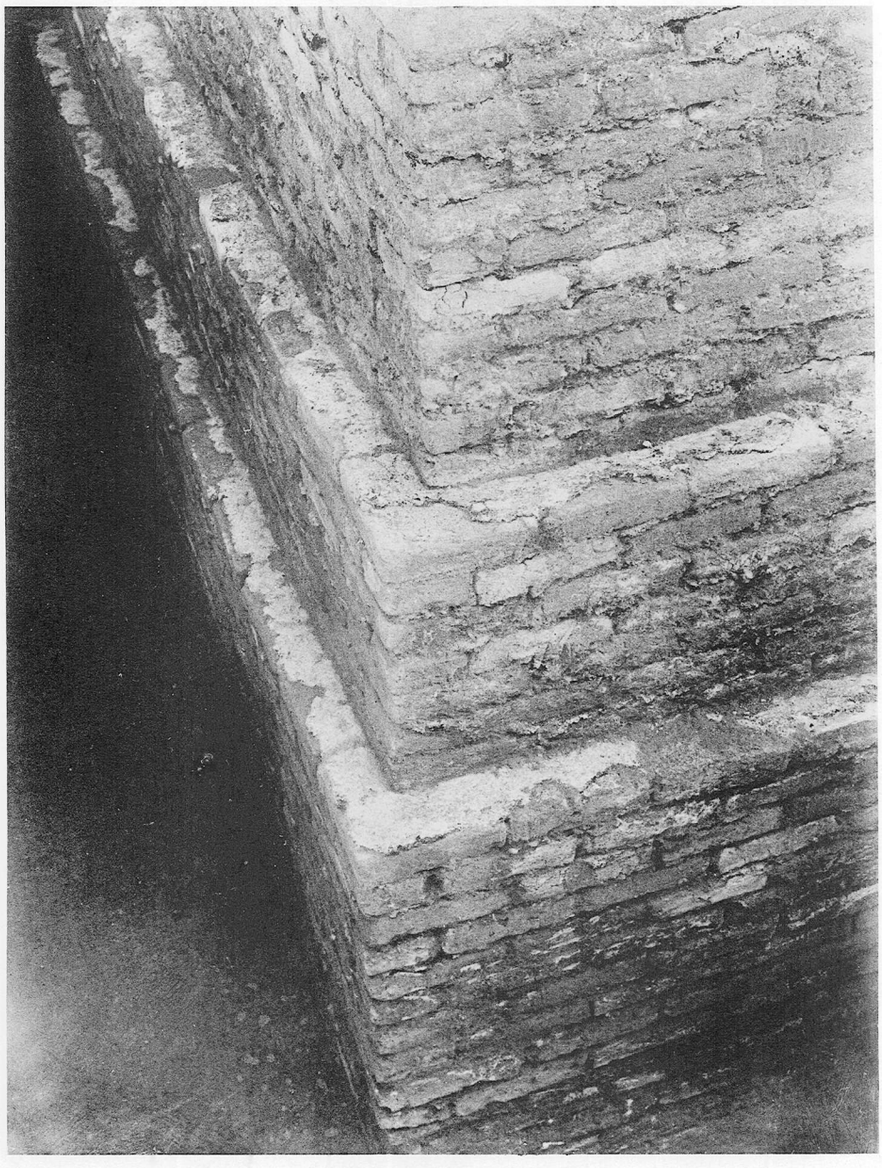
THE NANNAR COURT

a. Excavating the NE. range

b. Door of room 27 (Kassite), with Neo-Babylonian foundation-boxes in position. (*See p*. 96)

THE NANNAR COURT

a. The Sin-idinnam base, top view. (*See p*. 83)



b. The same, showing stepped-out foundations. (*See p*. 83)

THE NANNAR COURT

a. The west angle

b. The NW. face

THE ZIGGURAT

THE ZIGGURAT

The NE. face

The NW. flight of stairs; remains of the Nannar sanctuary in foreground

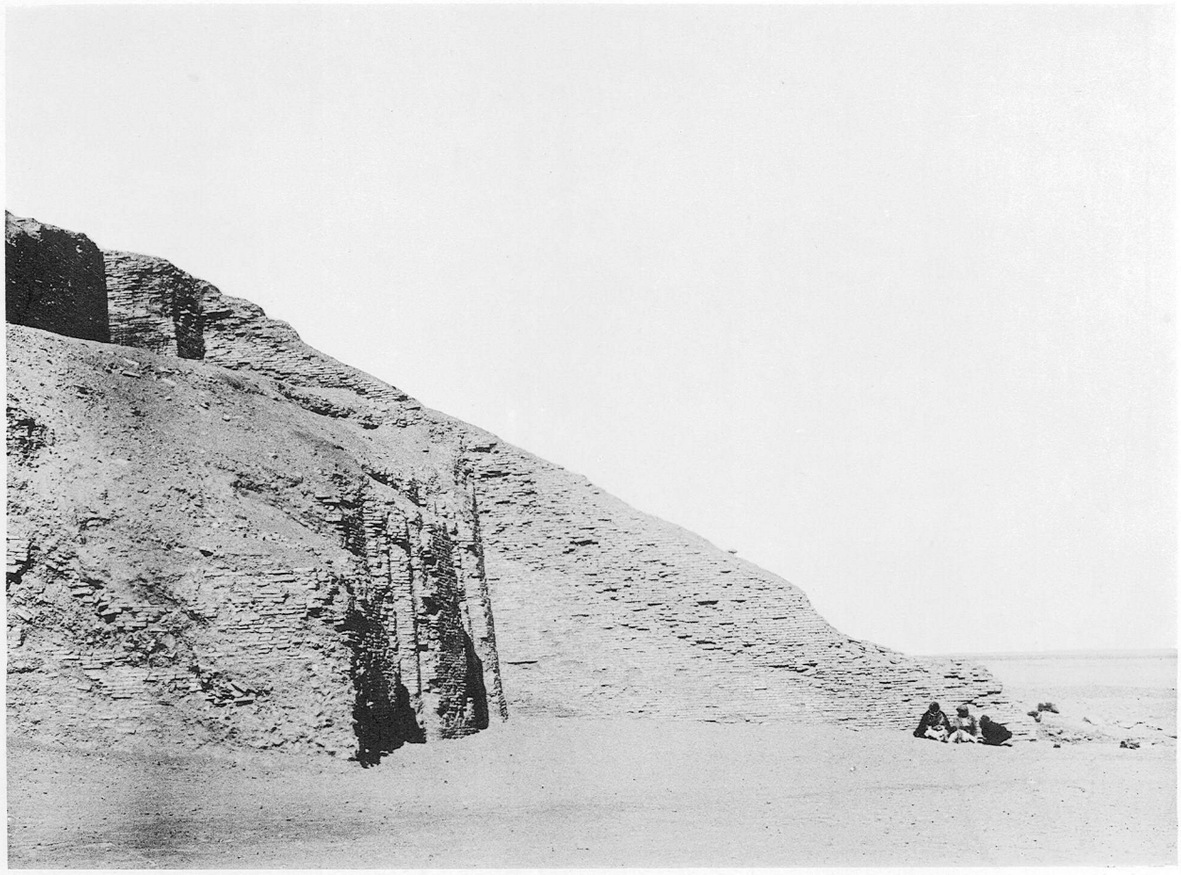
THE ZIGGURAT

a. The NW. flight of stairs as restored by Nabonidus

b. The NE. face: the NW. buttress in the stair-angle

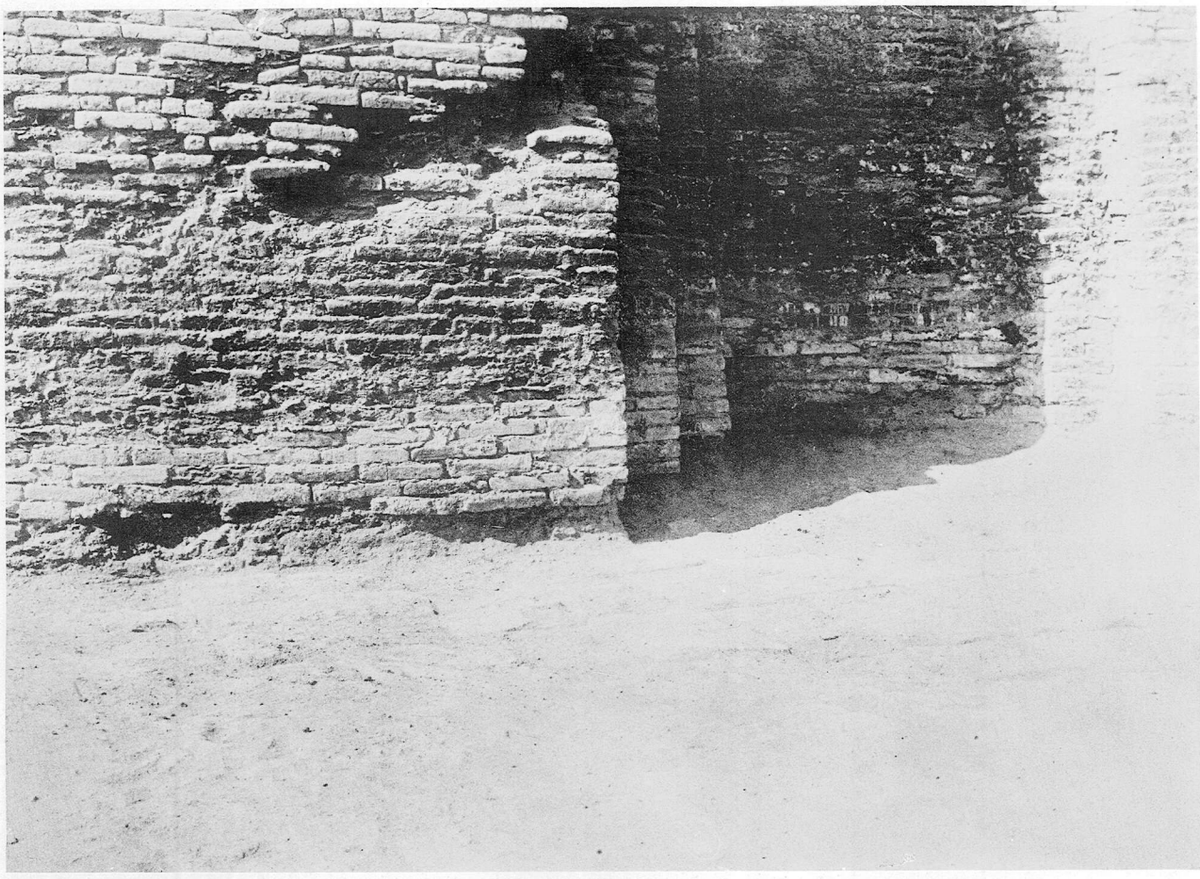
THE ZIGGURAT

a. The NE. face: the NW. side of the central stair flight

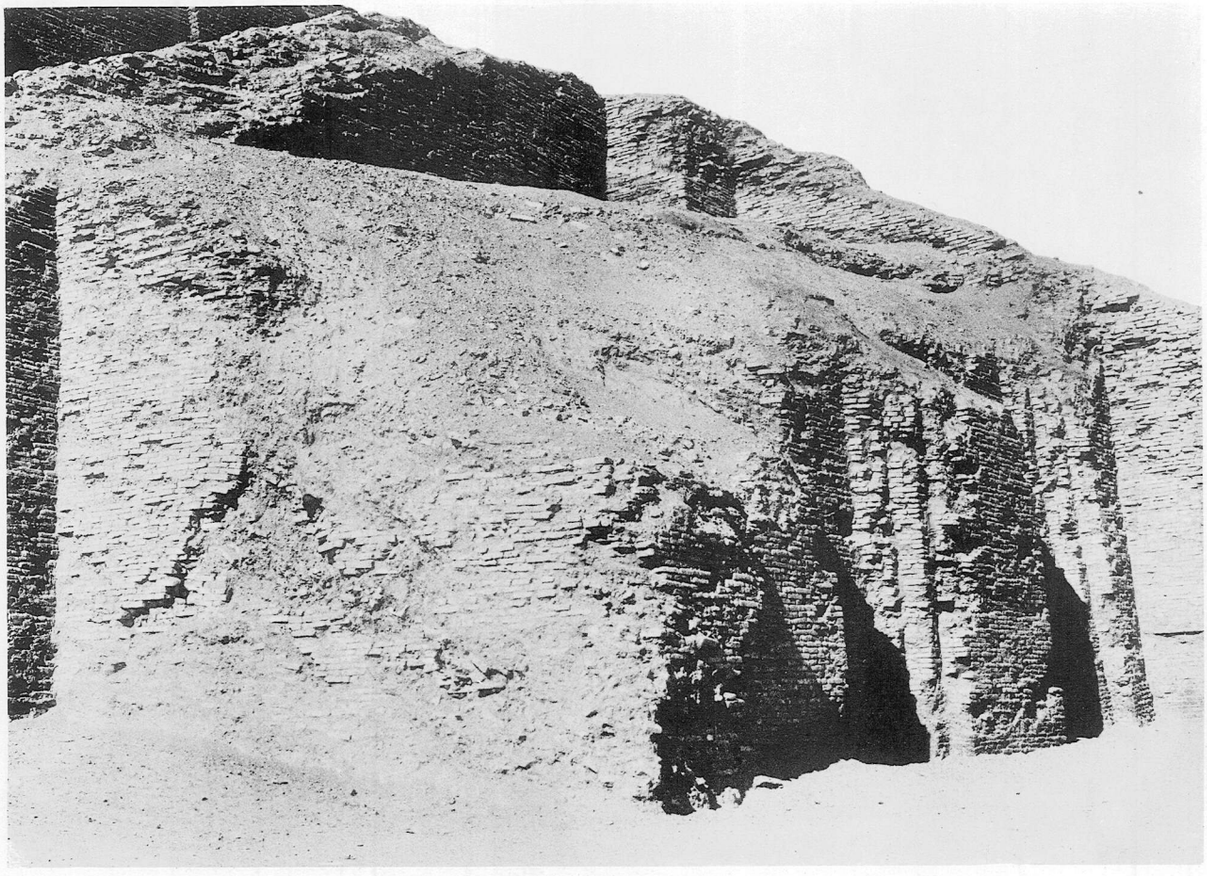


b. The same: the SE. side of the central stair flight

THE ZIGGURAT

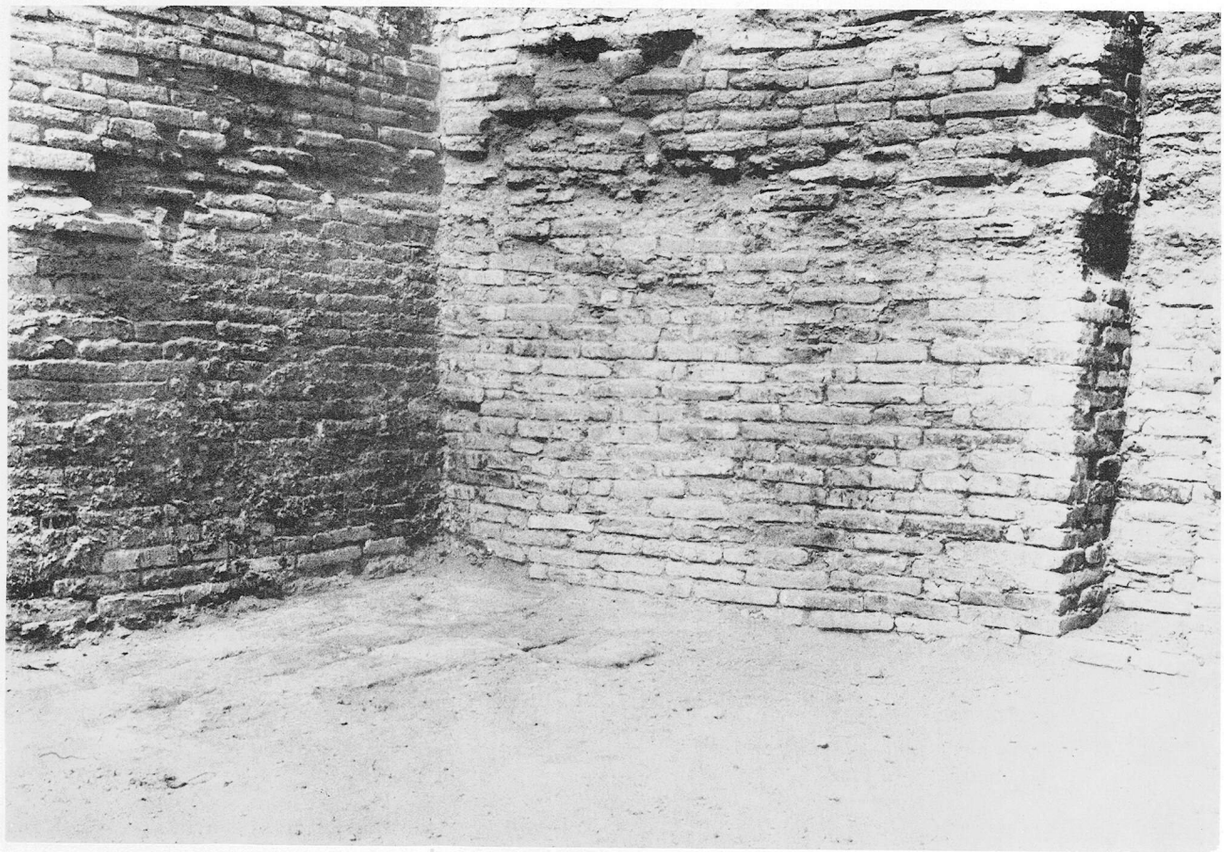


a. The NE. face: recess in the buttress-front, with remains of pavement of Larsa period

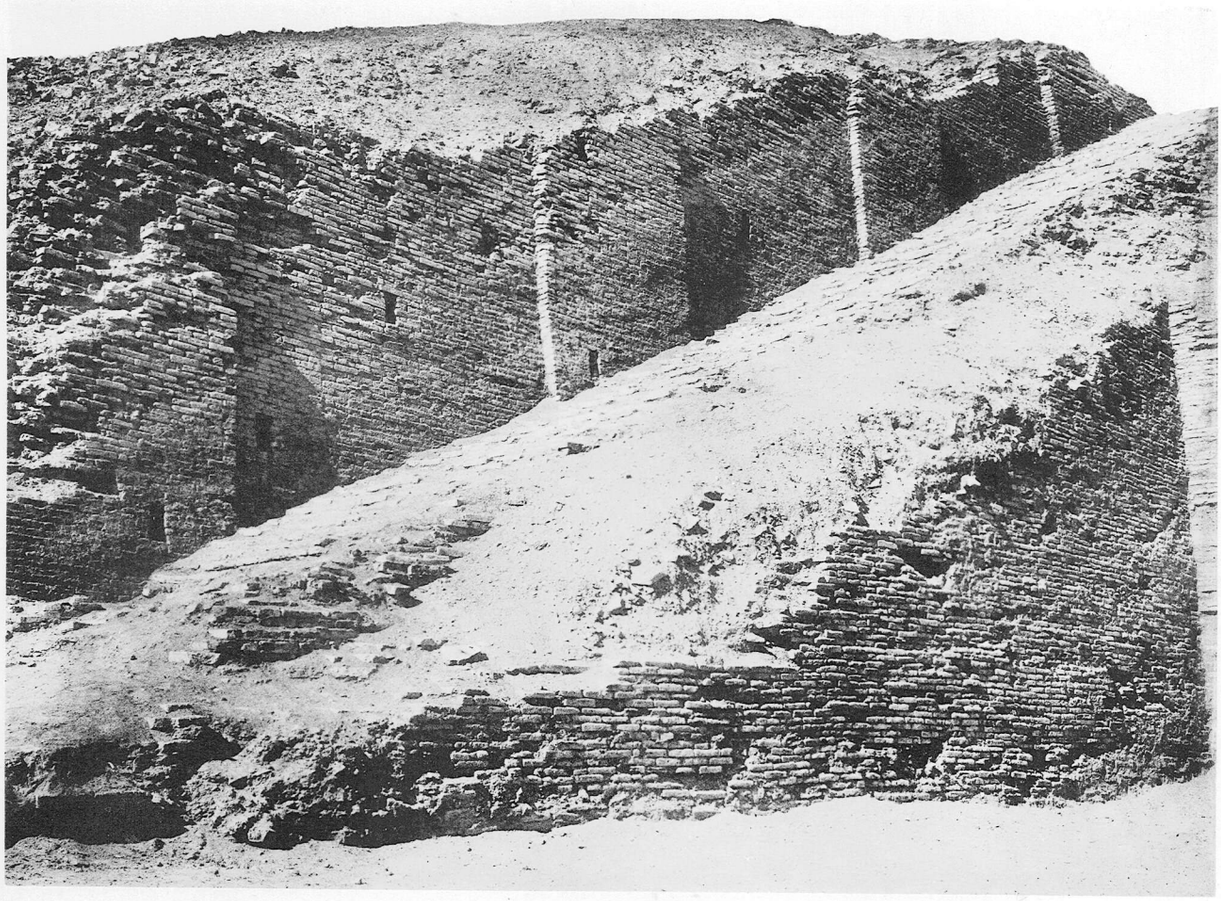


b. The NE. face: the buttress in the stair angle

THE ZIGGURAT



a. The NE. face: pavement of Adad-apal-idinnam in the buttress angle. (*See p.* 124)



b. The NE. face: the baluster wall of the SE. stair flight, partly restored by Nabonidus

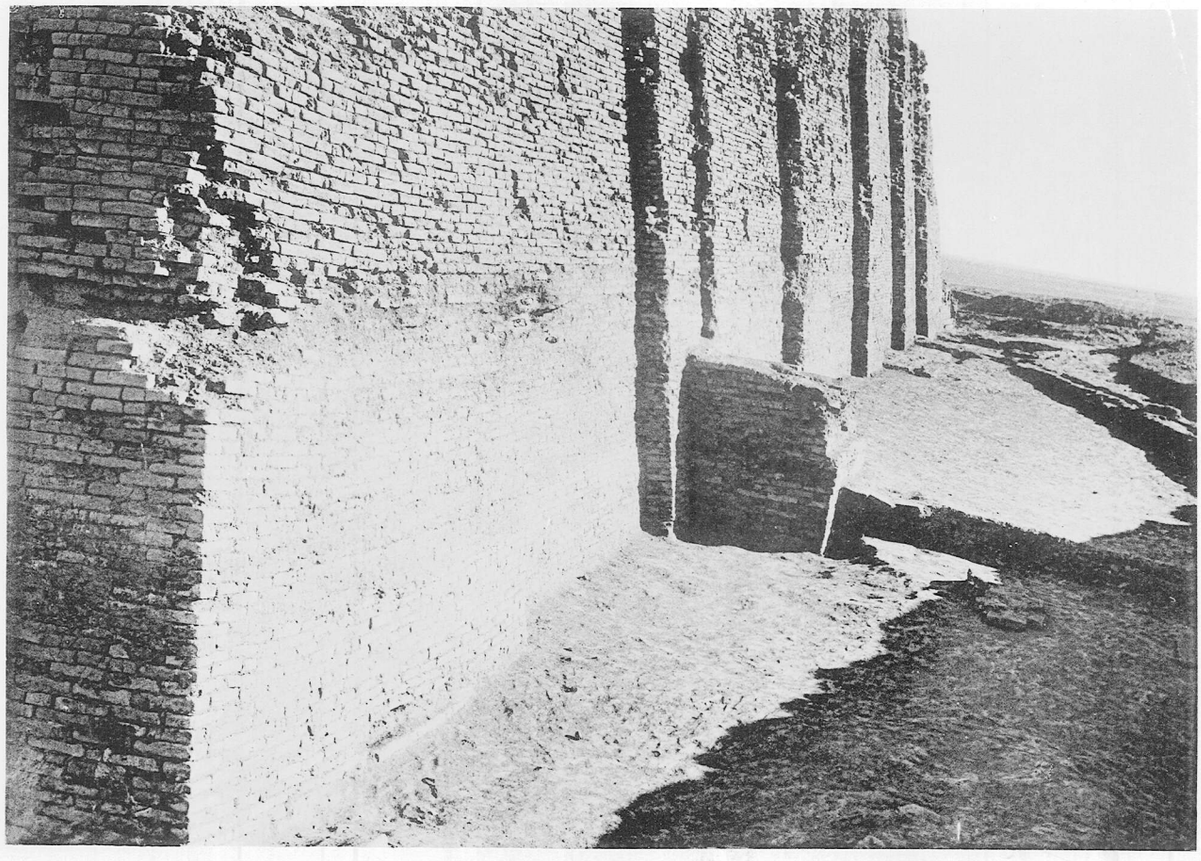
THE ZIGGURAT

a. The NE. face: the SE. stair flight of Nabonidus

b. The SE. face: the east corner cleared

THE ZIGGURAT

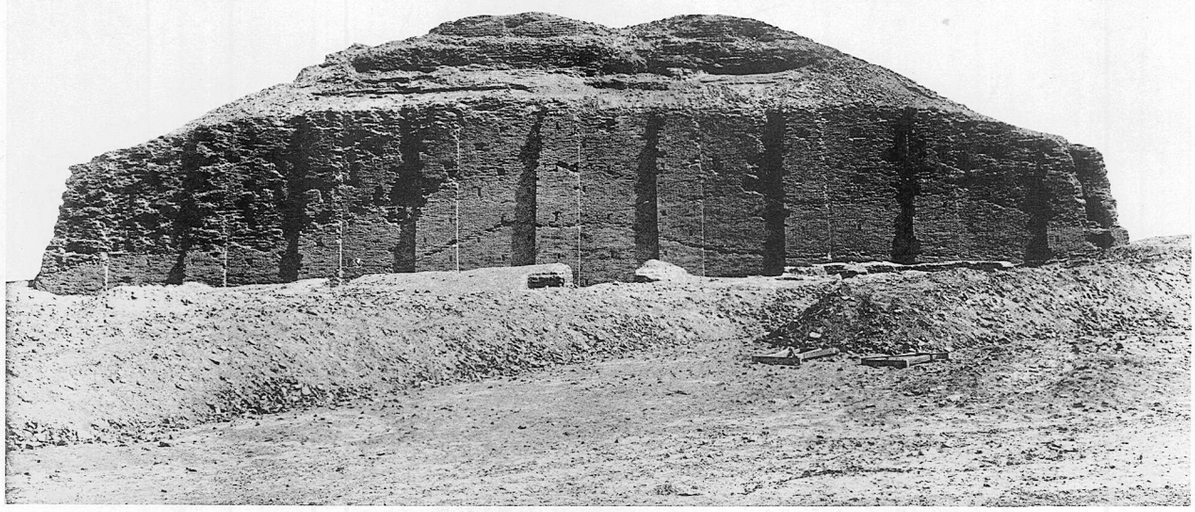
a. The SE. face: E. end, showing late drains. (*See p.* 65)



b. The same, from the S. corner, showing vertical drain-recess and brick 'apron' of Ur-Nammu

THE ZIGGURAT

a. The south angle



b. The SW. face

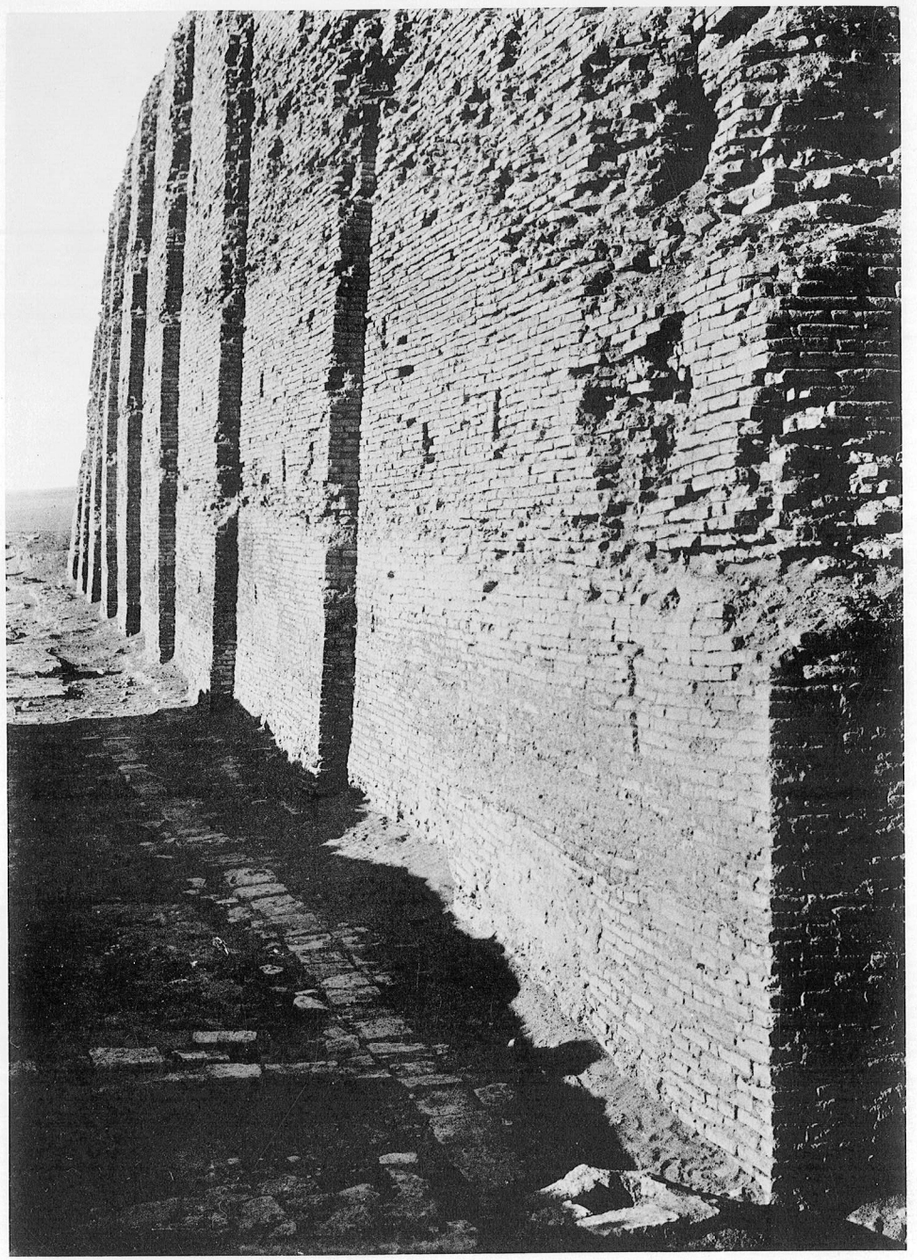
THE ZIGGURAT

a. The SW. face, central part, seen through the Nabonidus gate, with remains of upper terrace

b. The same, showing upper remains and the preservation of brickwork

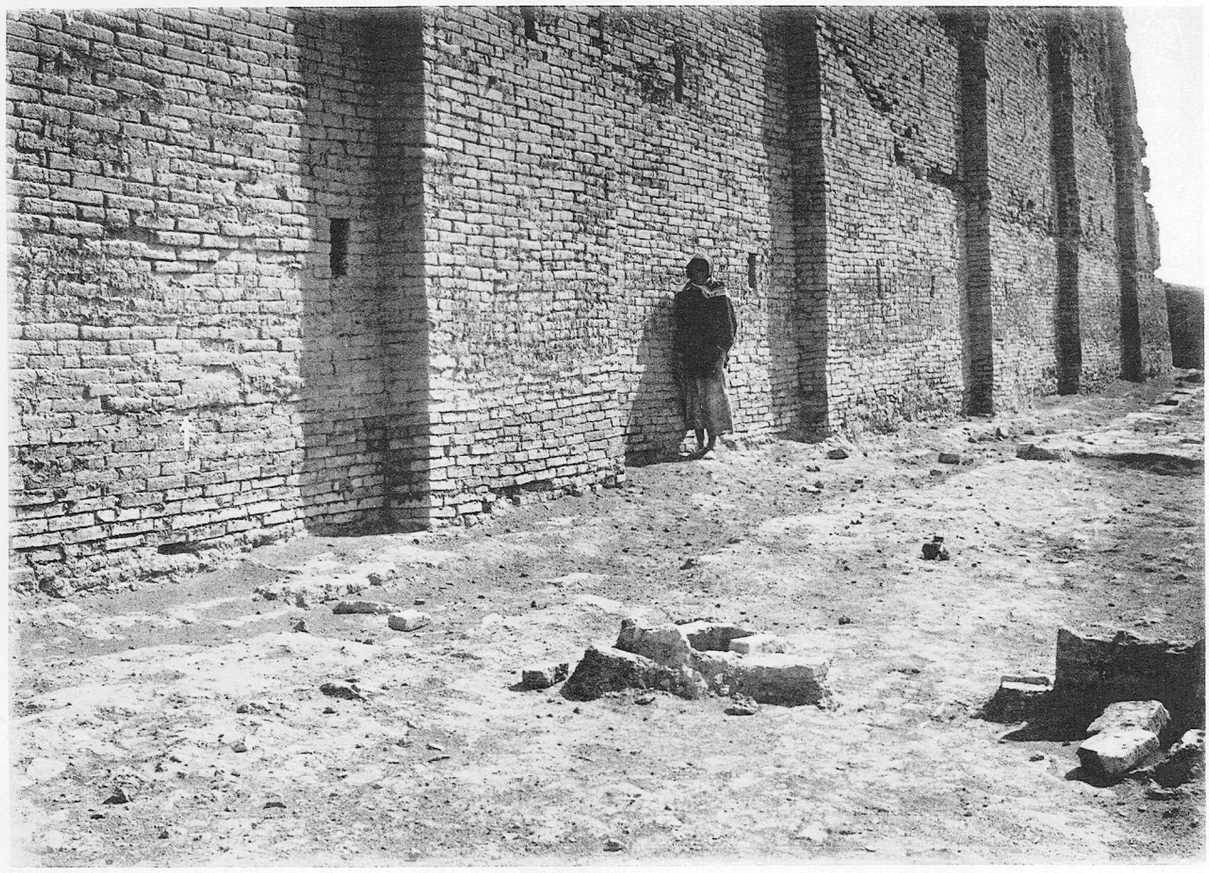
THE ZIGGURAT

a. The SW. face, showing batter and curve. Neo-Babylonian remains below. (*See p.* 72)



b. The same, from the S. corner, showing Larsa drain at foot

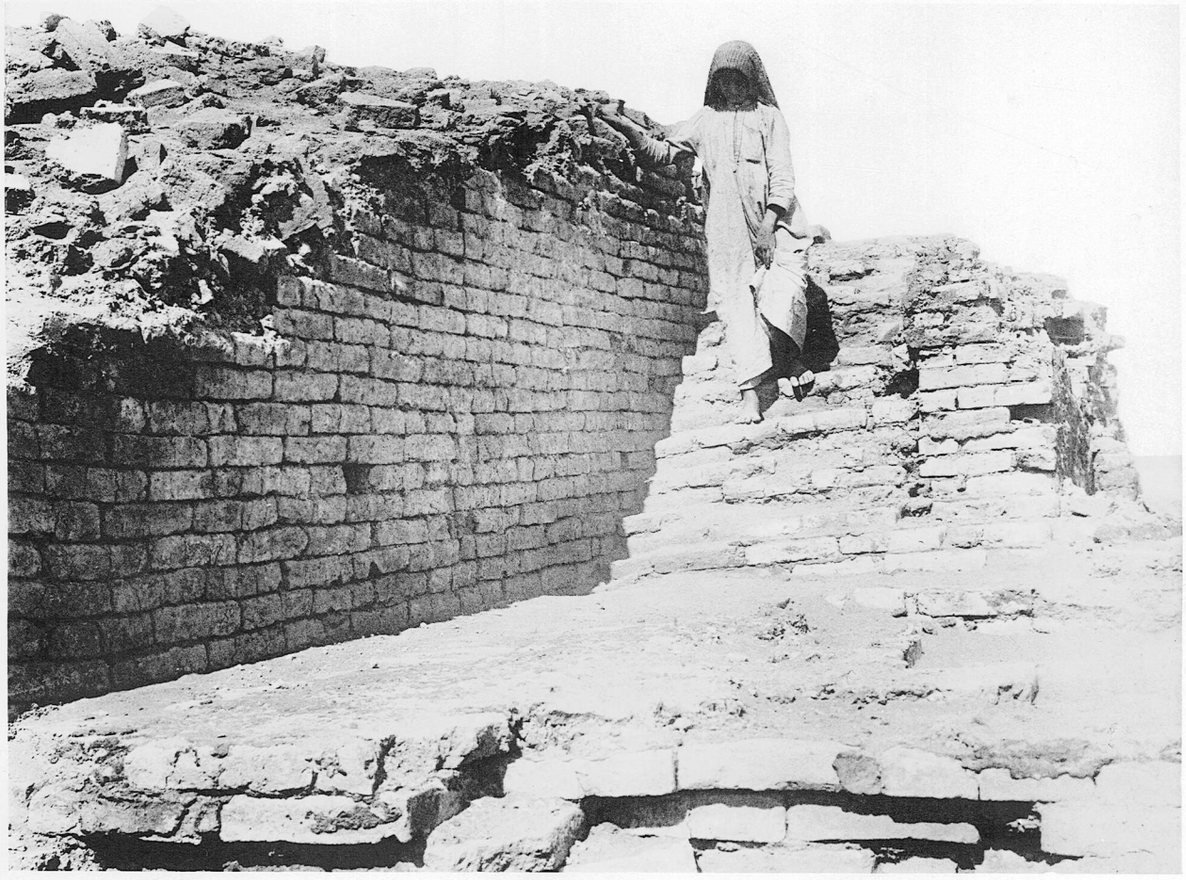
THE ZIGGURAT



a. The SW. face: the brickwork in the first bay was repaired in Larsa times (stamped brick of Bur-Sin found here). (*See pp.* 73, 122)

b. Top of NW. flight of stairs, showing the remaining treads of Ur-Nammu's stairway and the doorway of the platform tower. (*See p.* 101)

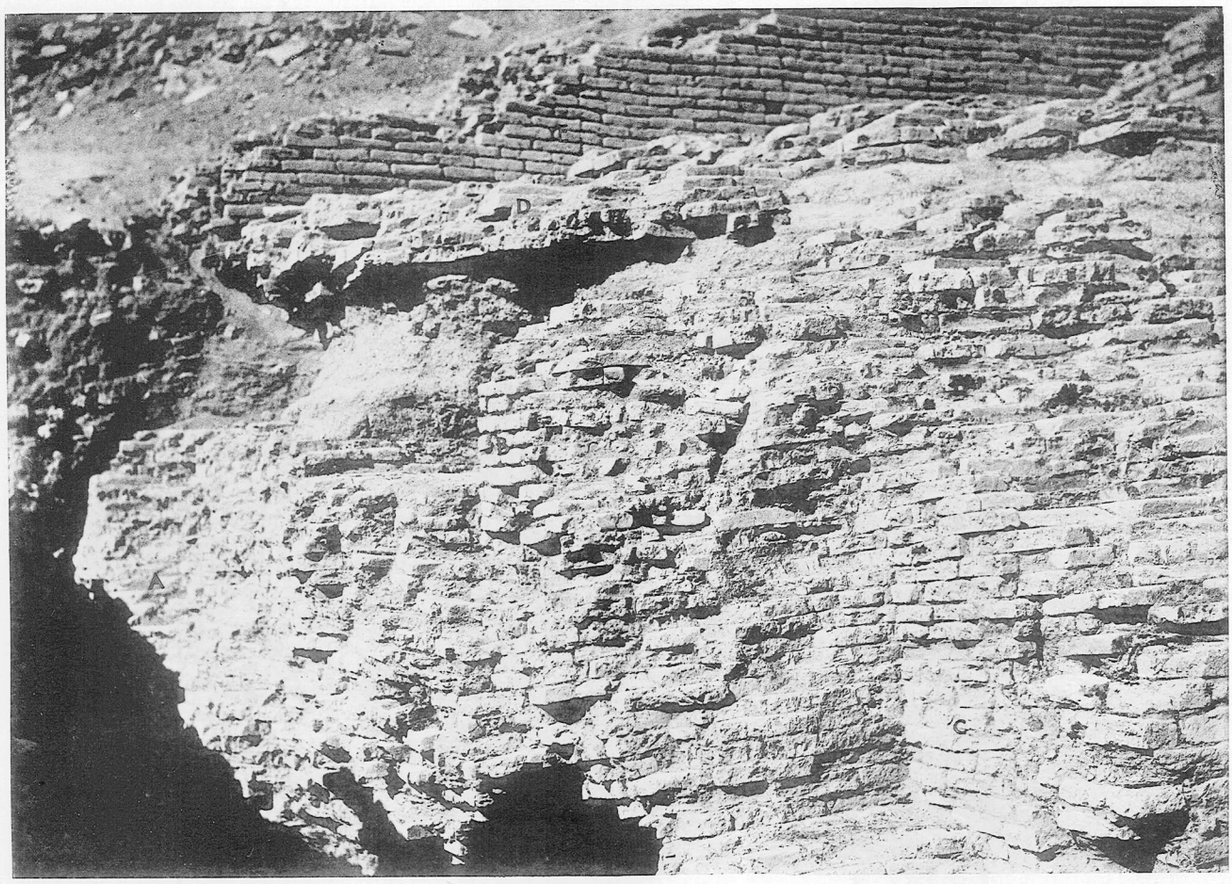
THE ZIGGURAT



a. The upper terrace, NE. side: the platform pavement and the Nabonidus staircase. (*See p.* 139)

b. The NE. terrace: A, foundations of Ur-Nammu's gate tower and jamb of his entrance to upper flight; B, the Ur-Nammu pavement, repaired by Nabonidus; C, Nabonidus' staircase; D, terrace wall of Ur-Nammu, repaired by Nabonidus

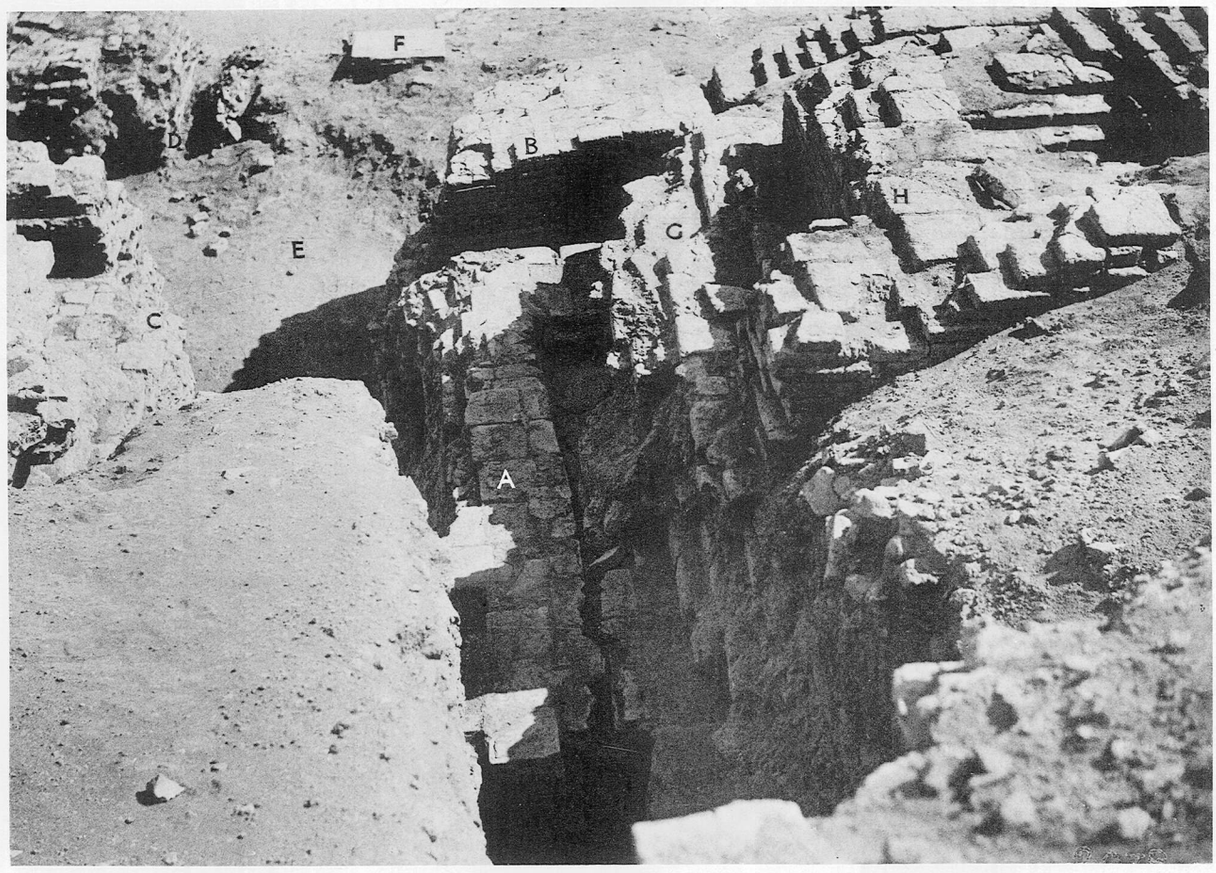
THE ZIGGURAT



a. NW. section of Taylor's cut, showing: A, the section of the upper stair-foundation of Ur-Nammu; B, jamb of door to Ur-Nammu's upper flight; C, inner face of gateway jamb on NW. lower flight of Ur-Nammu; D, E, pavement and wall of Nabonidus

b. Taylor's cut, looking SW., showing: A, A, foundations of Ur-Nammu's upper stairs; B, face of jamb at stair-foot; C, rubbish filling left by Taylor; D, D, Nabonidus' terrace pavement; E, E, Nabonidus' terrace front; F, Nabonidus' mud-brick upper core

THE ZIGGURAT



a. Taylor's cut: view looking NE.: A, side wall (SE. side) of upper Ur-Nammu staircase; B, foundation of S. corner of Ur-Nammu's gate-tower; C, W. corner of gate-tower; D, N. corner of gate-tower; E, present level of Ur-Nammu's stair-head, main flight; F, modern stair-head; G, Nabonidus pavement; H, Nabonidus terrace wall

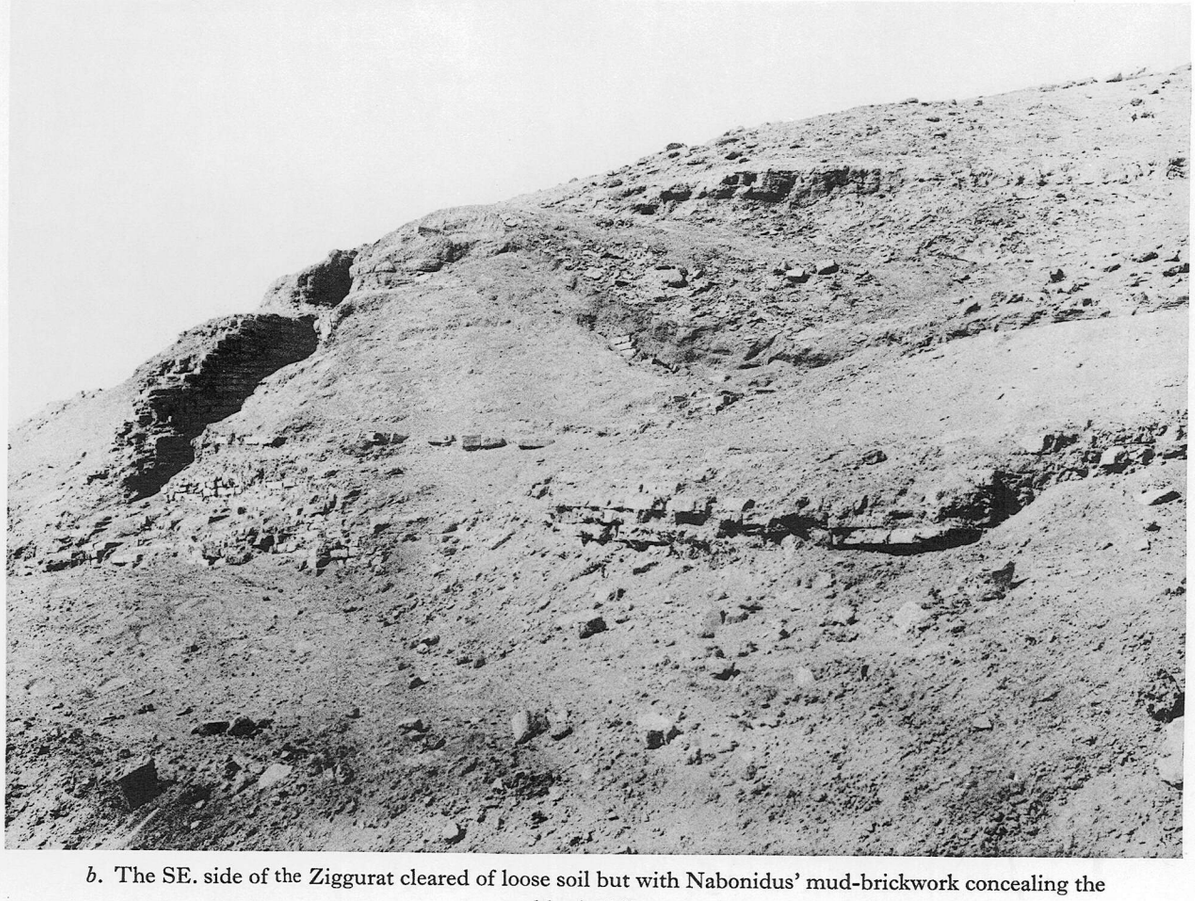
b. The same: the approach to Ur-Nammu's second staircase: A, battered containing-wall of second flight; B, foundation-chamber (?) with later pavement; C, later (Larsa?) wall; D, terrace pavement of Nabonidus; E, upper terrace wall of Nabonidus; F, tunnel cut by Taylor. (*See p.* 106)

a. S. angle of upper terrace: A, S. corner of Ur-Nammu's upper terrace wall; B, Ur-Nammu's lower terrace pavement; C, Larsa pavement; D, burnt-brick pavement resting on cement foundations; E, mud-brickwork of Nabonidus

b. The same: A, buttressed wall of Ur-Nammu's upper terrace; B, Ur-Nammu's pavement; C, cross-wall of Ur-Nammu's terrace chamber, with later brickwork above; D, cement floor-foundations; E, Nabonidus brickwork. (*See p.* 123)

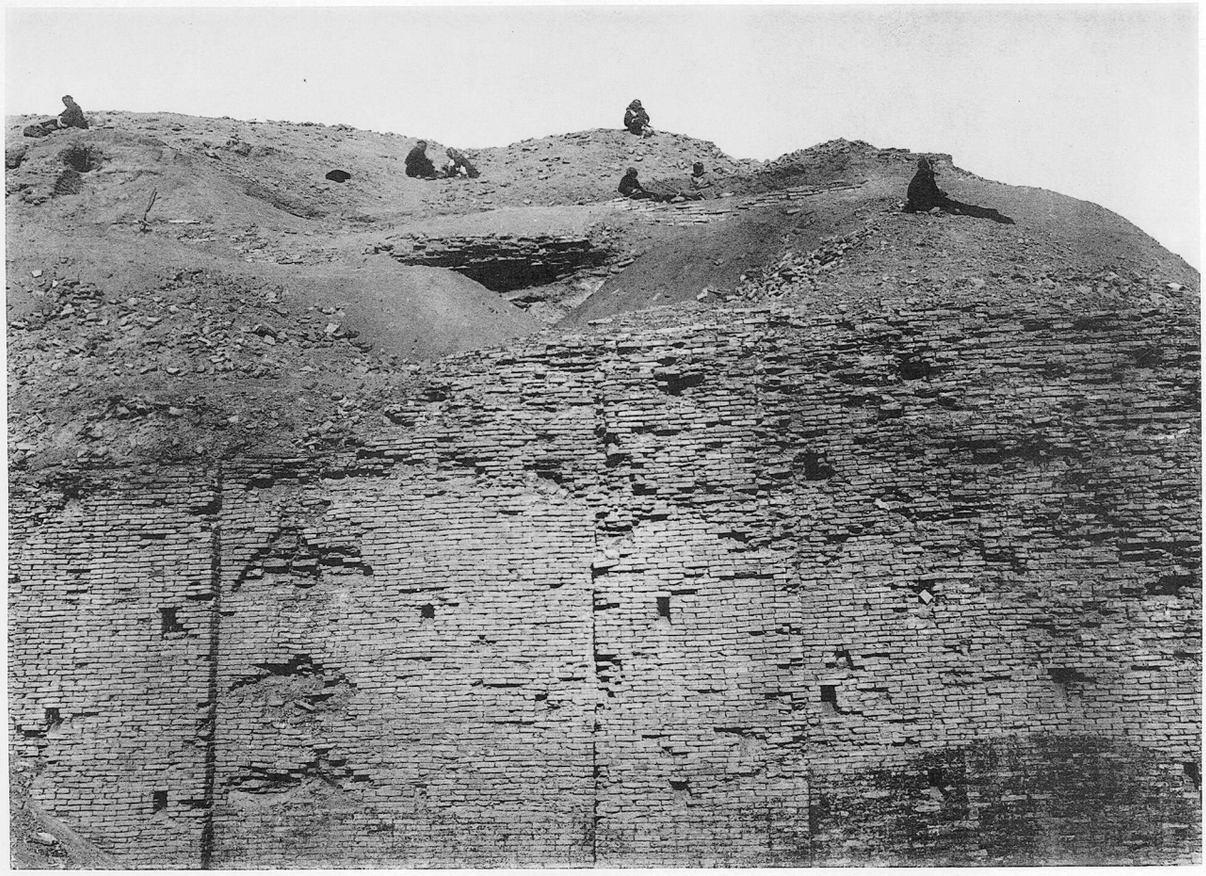
THE ZIGGURAT

a. The SE. side of Taylor's cut, showing: A, brickwork of Ur-Nammu, the S. corner of the gate-tower; B, upper staircase wall of Ur-Nammu; C, pavement of Nabonidus; D, upper terrace front of Nabonidus



b. The SE. side of the Ziggurat cleared of loose soil but with Nabonidus' mud-brickwork concealing the older buildings

THE ZIGGURAT



a. The SE. side of the Ziggurat, showing the broken pavement-edge of the terrace. (*See p.* 129)

b. The E. corner of the upper terrace wall of Ur-Nammu, showing the hole in his pavement and wall-foundation made by Nabonidus (the hole then filled up with Nabonidus brickwork). (*See p.* 129)

THE ZIGGURAT

a. SE. front of upper terrace: A . . . A, Ur-Nammu's upper terrace wall; B, his pavement; C, Larsa wall; D, brickwork of Nabonidus; E, Ur-Nammu's first cross-wall with door reveal; F, Ur-Nammu's second cross-wall, with later brickwork above; G, Nabonidus' mud-brickwork. (*See p.* 109)

b. The terrace chamber: A, A, A, Ur-Nammu walls; B, Ur-Nammu wall-foundations; C, later brickwork. (*See p.* 110)

a. The late paving in the terrace chamber. (*See p.* 111)

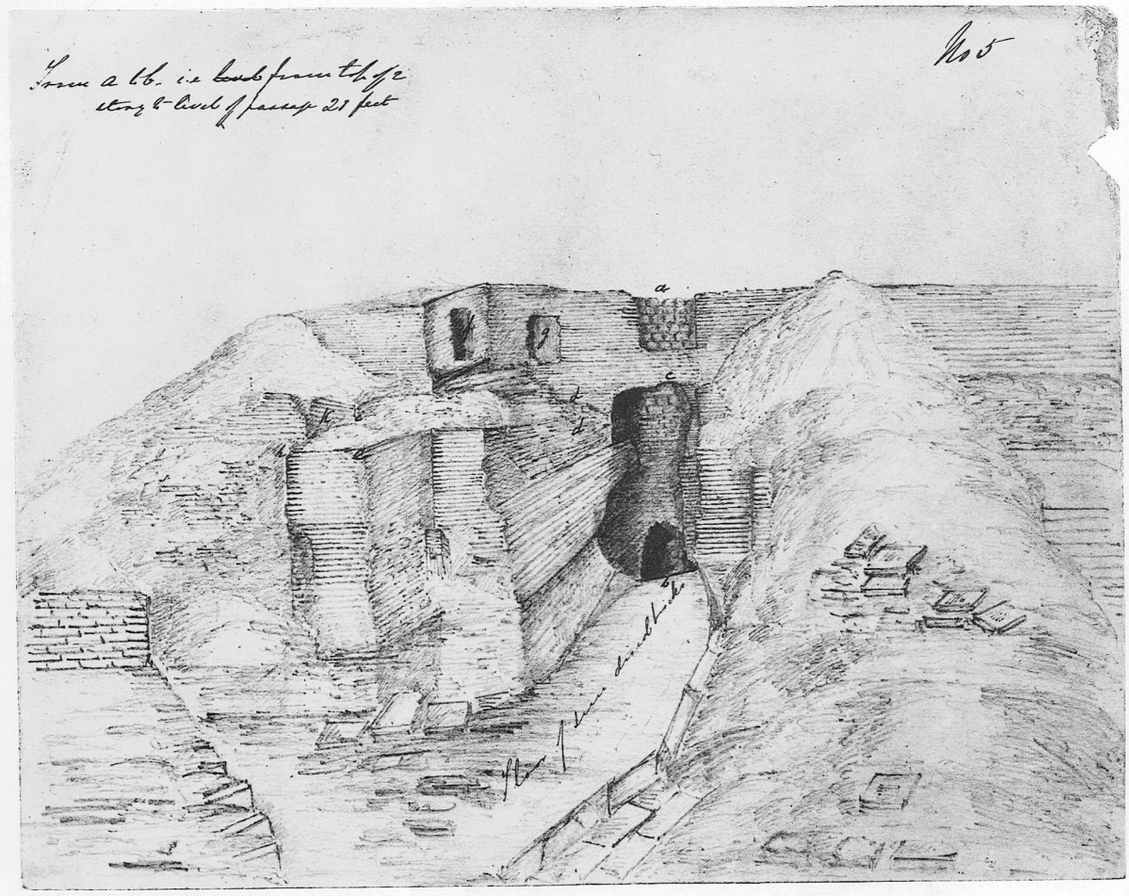
b. The terrace chamber: the Larsa pavement mostly removed, exposing the Ur-Nammu pavement and votive offerings in the form of copper crescents and boats. (*See p.* 111)

a. NW. side of Ziggurat, upper terrace: Nabonidus' pavement and retaining-wall of upper staircase, view looking NE.

b. The same: the retaining-wall of Nabonidus, showing buttress. (*See p.* 127)

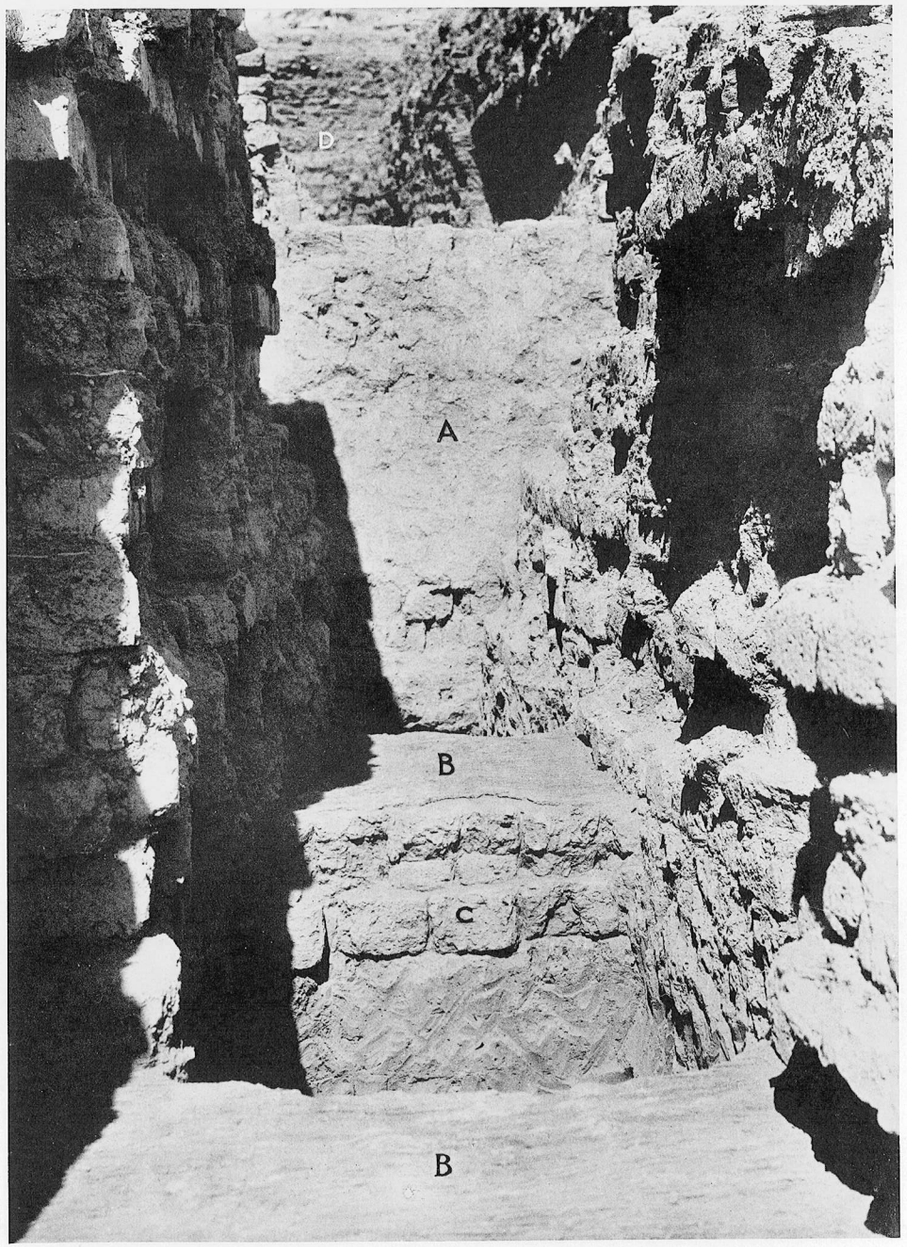
THE ZIGGURAT

a. The NW. side of the Ziggurat, upper terrace: A . . . A, the crude brick core of the Nabonidus upper story; B . . . B, remains of burnt-brick casing; C, C, burnt-brick keys inset in the mud-brickwork. (*See p.* 127)

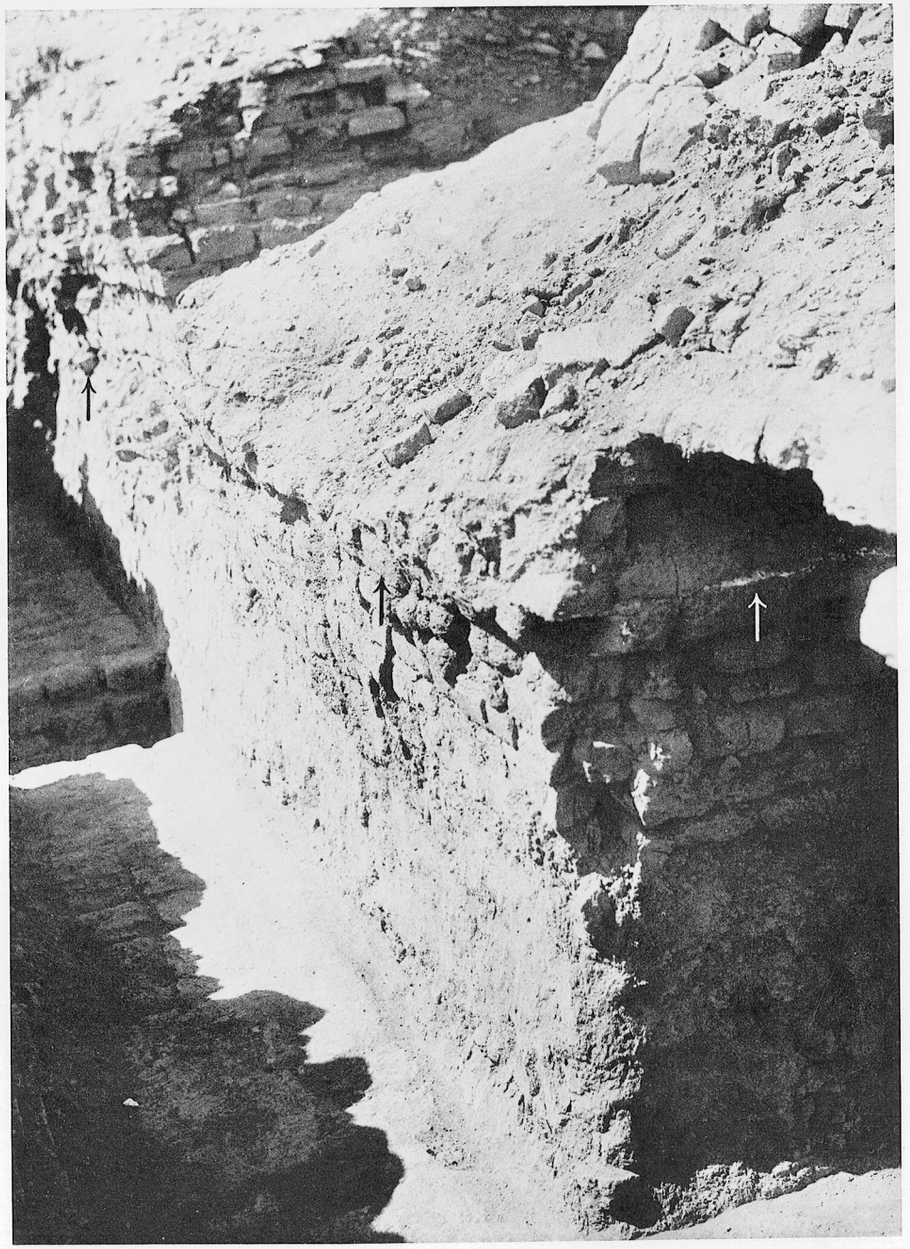


b. Taylor's drawing of the cut made by him at the top of the staircase. (*See p.* 103)

THE ZIGGURAT



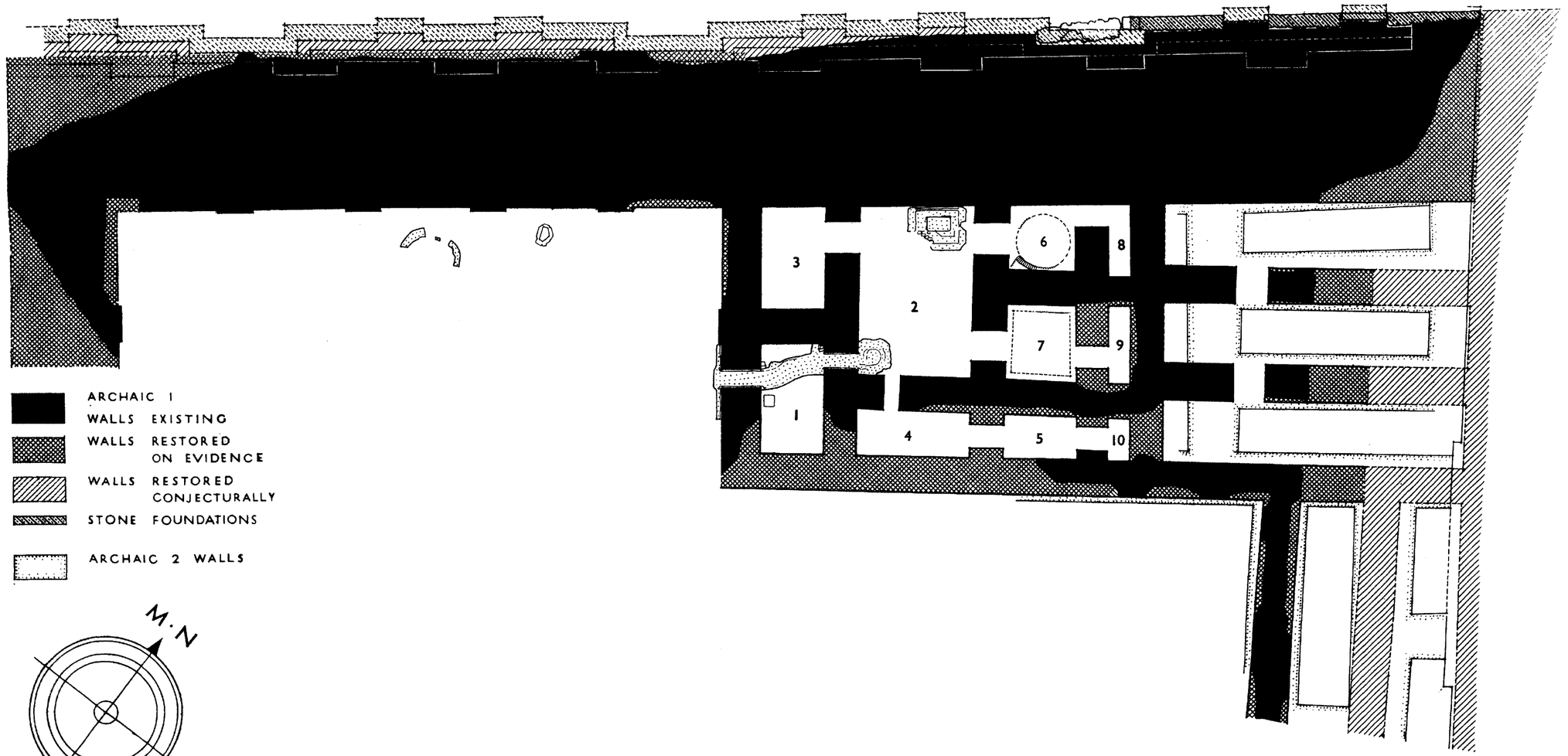
a. Ziggurat top, SE. side: cutting through Nabonidus' mud-brick terrace core showing: A, mud-brick third terrace of Ur-Nammu; B, B, layer of bitumen, reeds, and matting separating D, Nabonidus' mud-brickwork, from C, Ur-Nammu's mud-brick terrace floor-foundation. (*See p.* 112)



b. E. corner of the mud-brickwork of Ur-Nammu's third terrace; the exposed floor at the wall's foot is of Ur-Nammu mud bricks; above the arrow-points, the mud-brickwork of Nabonidus. (*See p.* 112)

THE ZIGGURAT

ZIGGURAT N.W. TERRACE ARCHAIC 1, 2



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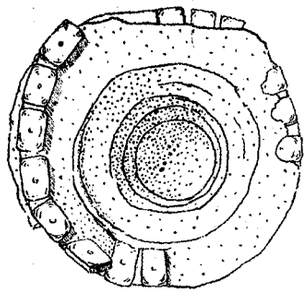
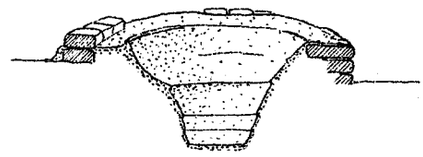
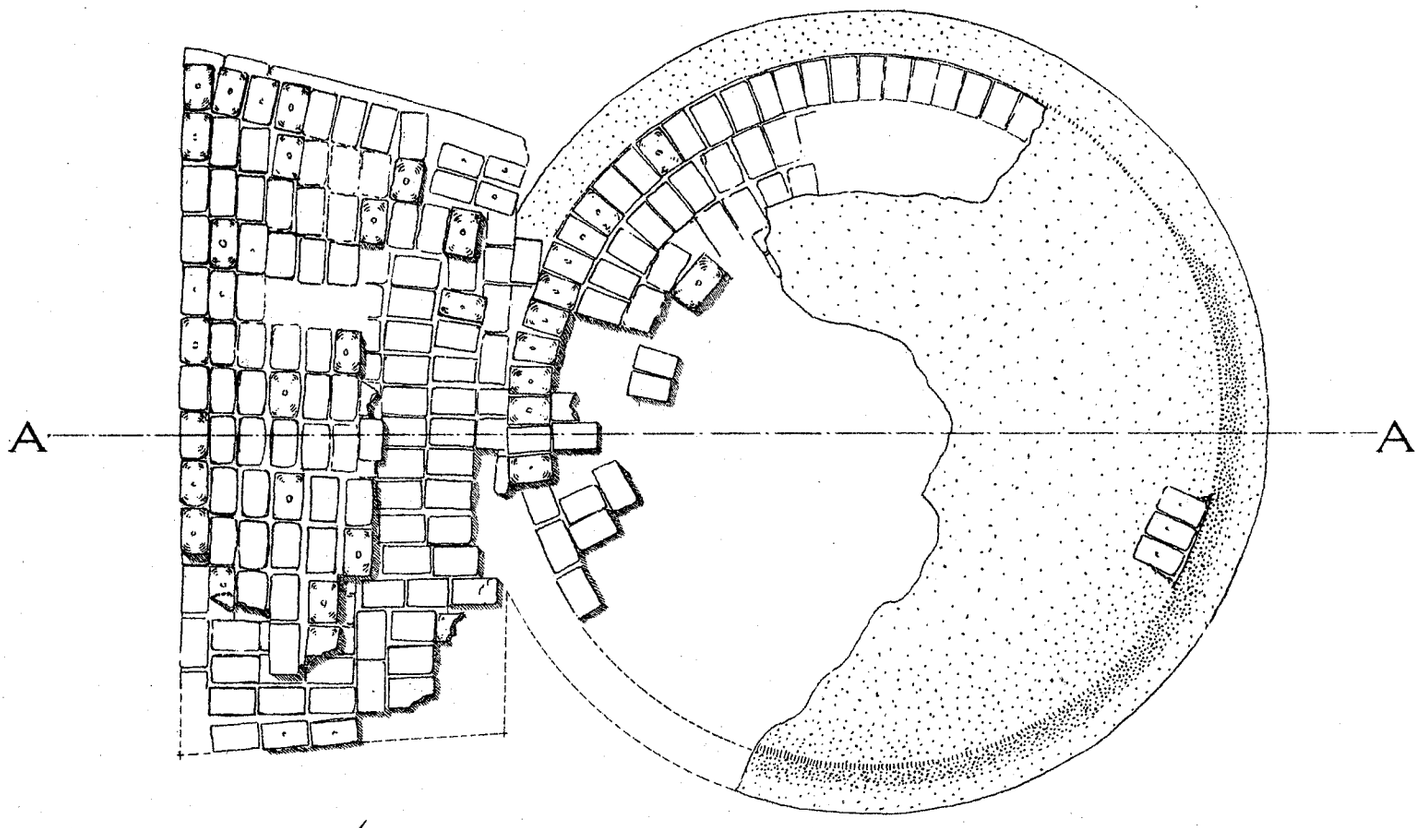
(See. p. 20)



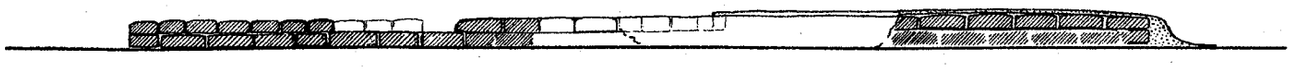
PLAN



SECTION



PLAN



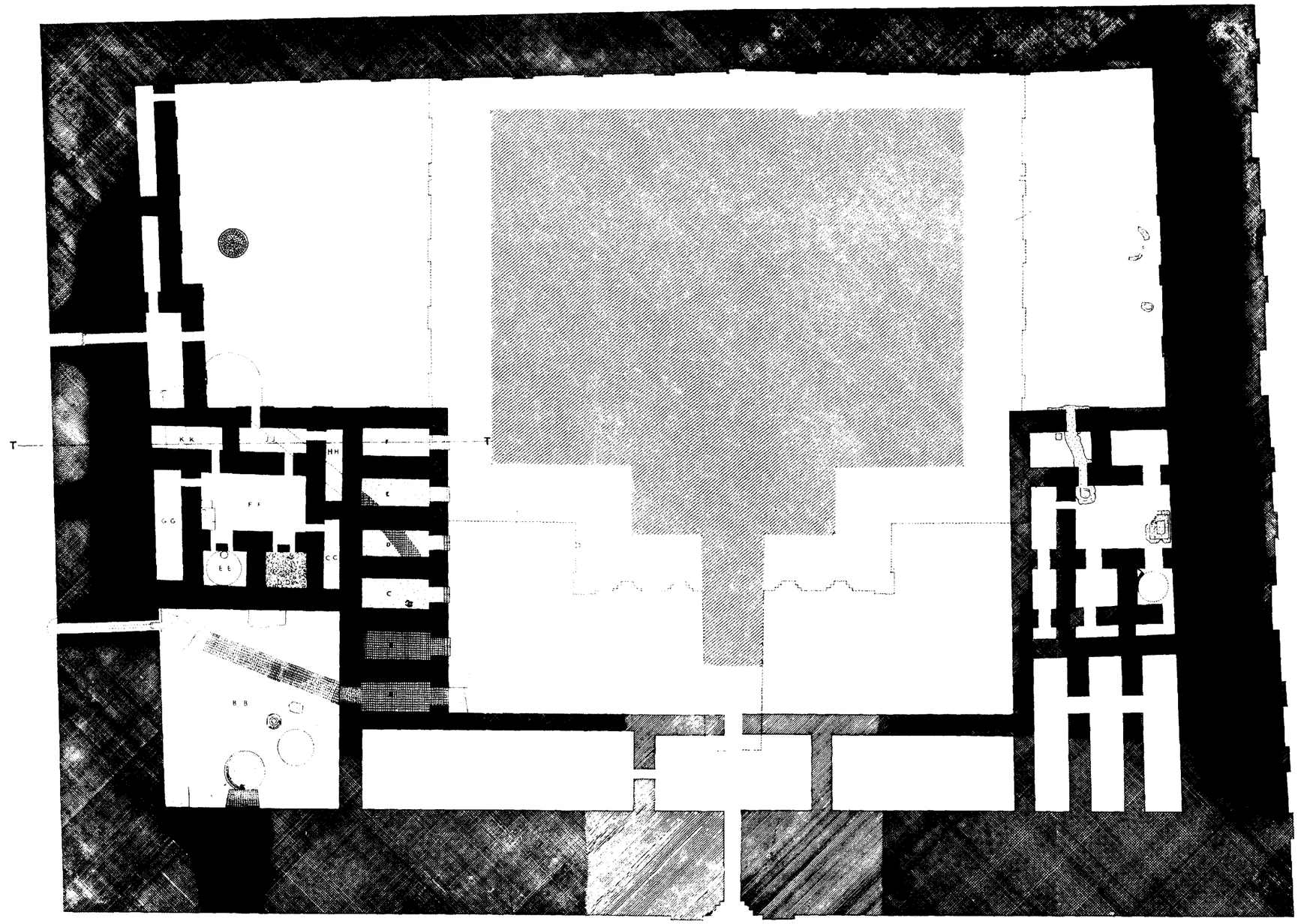
SECTION A-A

SCALE 25 50 75 0 1 2 3 METRES

A. F. E. GOTT: MENS. ET DELT.

Z.T.B.B. CIRCULAR BASE & BASIN

(*See. p.* 14)



SECTION T-T

ARCHAIC I
WALLS EXISTING
WALLS RESTORED ON EVIDENCE
WALLS RESTORED CONJECTURALLY

0 5 10 20 30 40
METRES

THE ZIGGURAT TERRACE

ARCHAIC I (FIRST DYNASTY) BUILDINGS

(THE DOTTED OUTLINE IS THAT OF THE THIRD DYNASTY ZIGGURAT)

(*See p. 7*)

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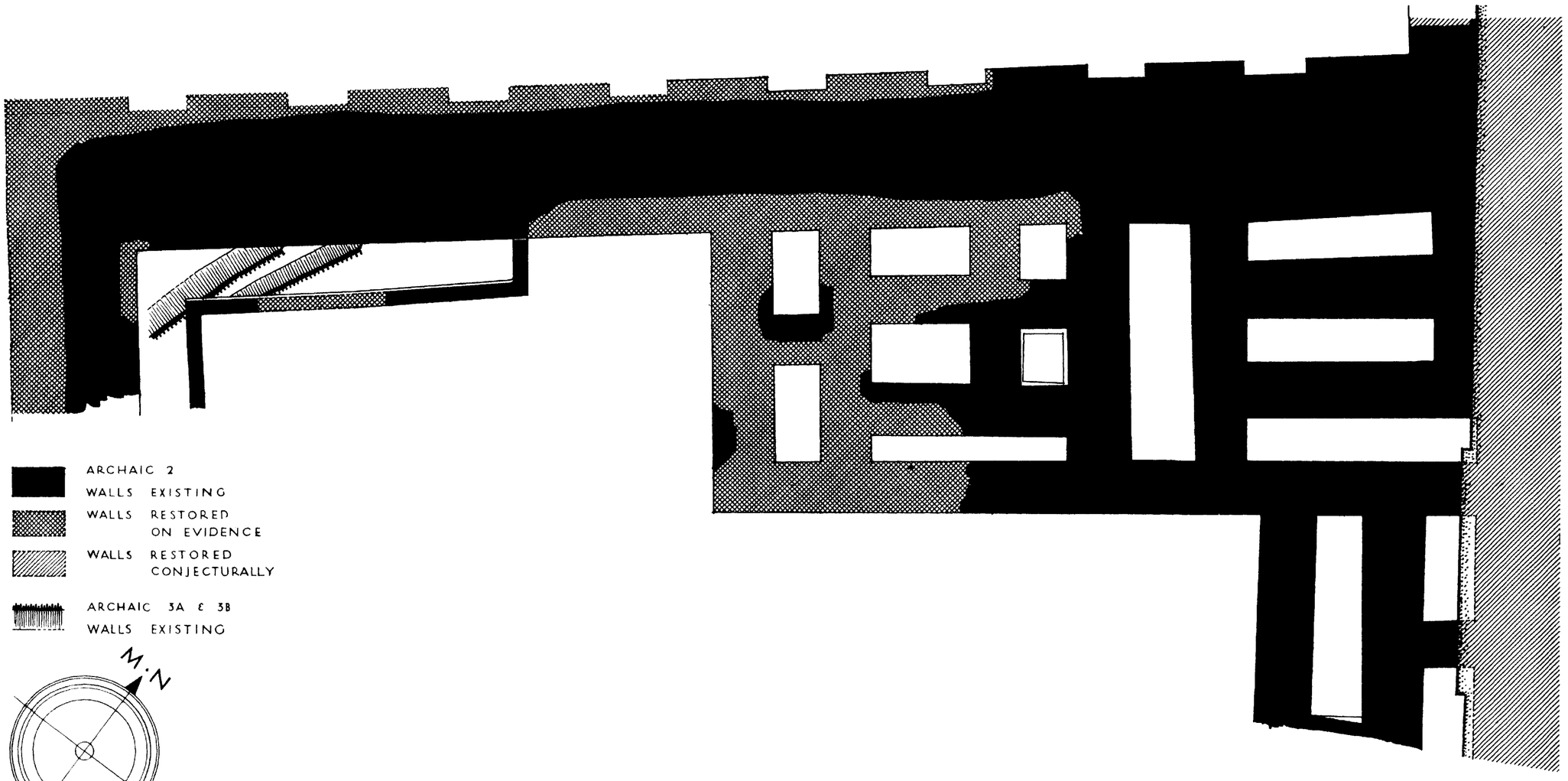
ZIGGURAT N.W. TERRACE ARCHAIC 2



ARCHAIC 2
WALLS EXISTING
WALLS RESTORED ON EVIDENCE
WALLS RESTORED CONJECTURALLY

ARCHAIC 3A & 3B
WALLS EXISTING

M.N

SCALE 0 5 10 20 30 40 METRES

JANUARY 1932

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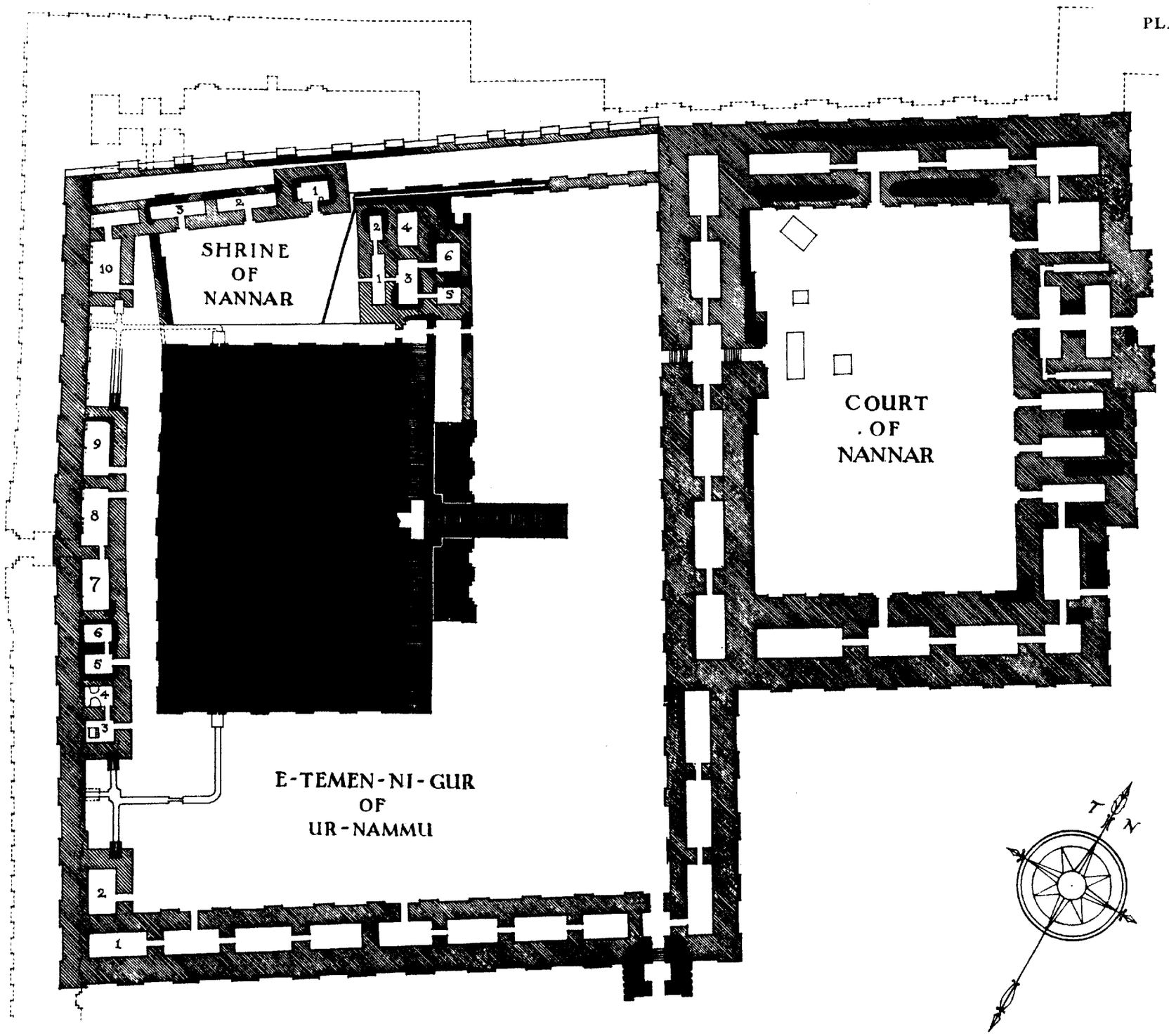
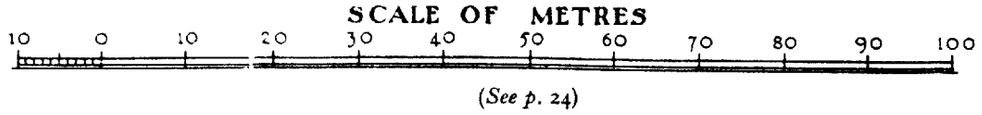
(*See pp.* 1, 66)



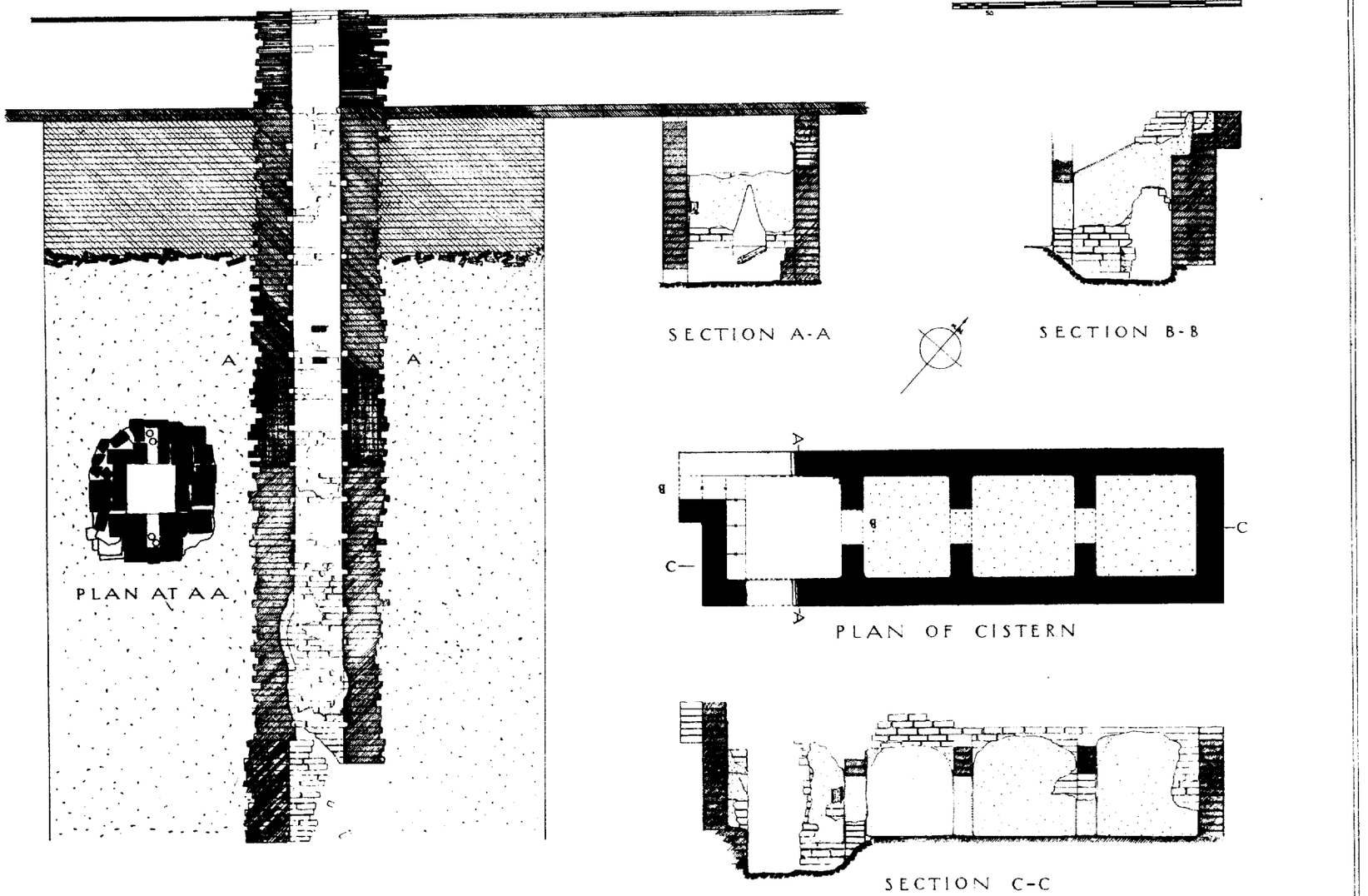
THE ZIGGURAT TERRACE

THIRD DYNASTY PERIOD. C·2300·B·C. TO 2150·B·C.



(See p. 24)

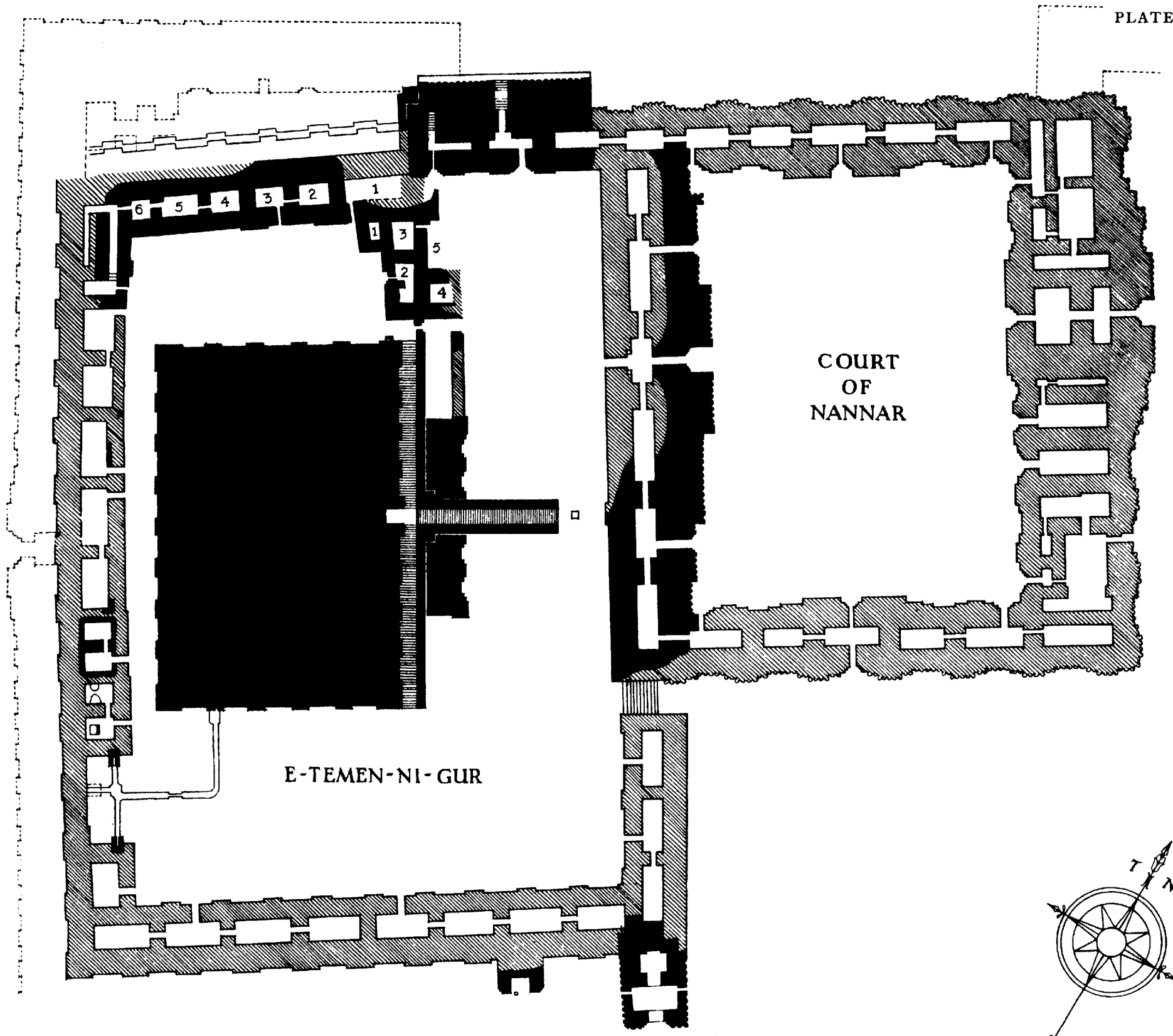
F·G·NEWTON.
A·S·WHITBURN., A·R·I·B·A.
C·L·WOOLLEY. Hon. A·R·I·B·A.
MENS ET DELT·· 1922 – 1930.



A. F. E. GOTT: MENS. ET DELT.

UR NAMMU'S WELL AND CISTERN

(*See pp.* 32, 34)



THE ZIGGURAT TERRACE

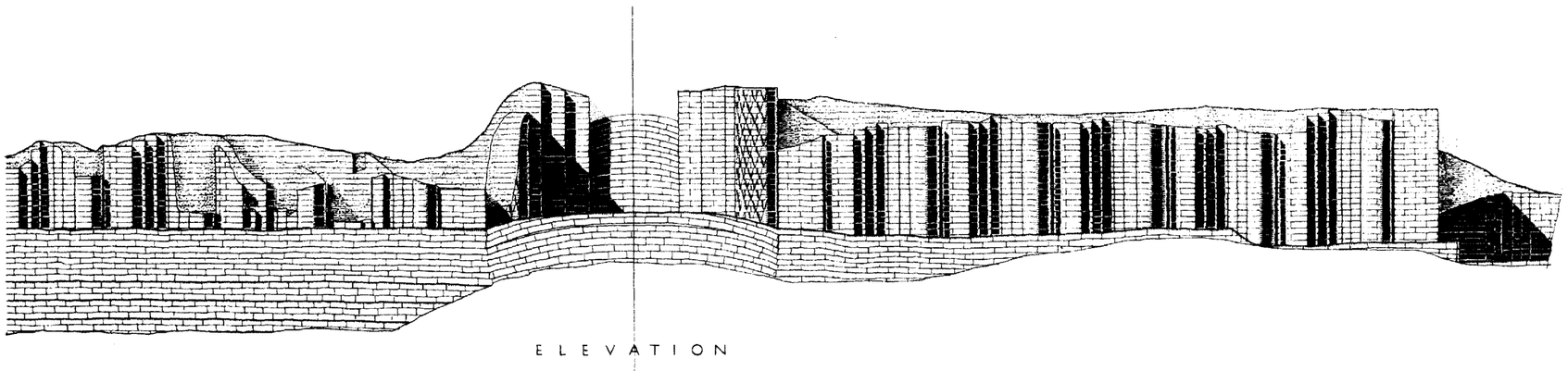
LARSA PERIOD · · C·2000.B·C

SCALE OF METRES.

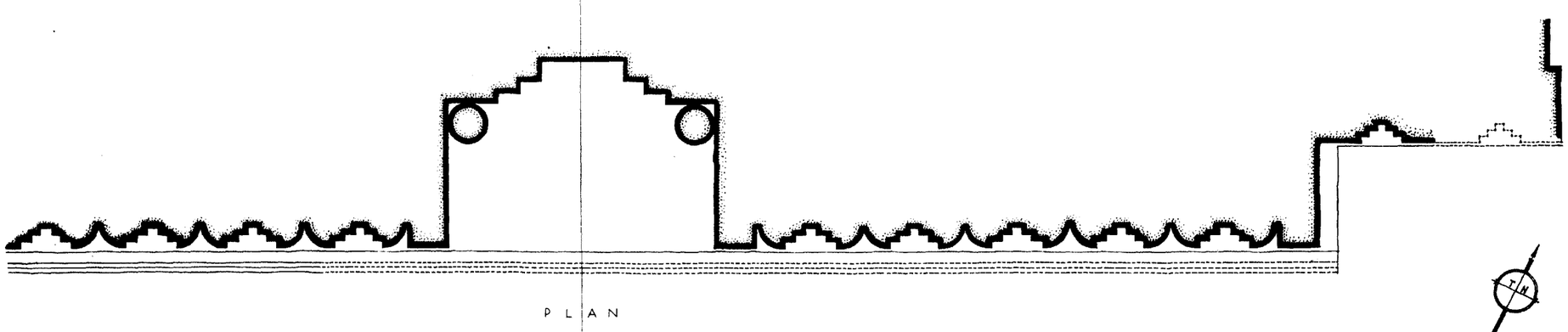
10 0 10 20 30 40 50 60 70 80 90 100

(See p. 40)

F·G·NEWTON.
A·S·WHITBURN. *A.R.I.B.A.*
C·L·WOOLLEY. *Hon. A.R.I.B.A.*
MENS ET DELT · ·1922 – 1930.



ELEVATION



PLAN

SCALE 1 0 5 10 METRES

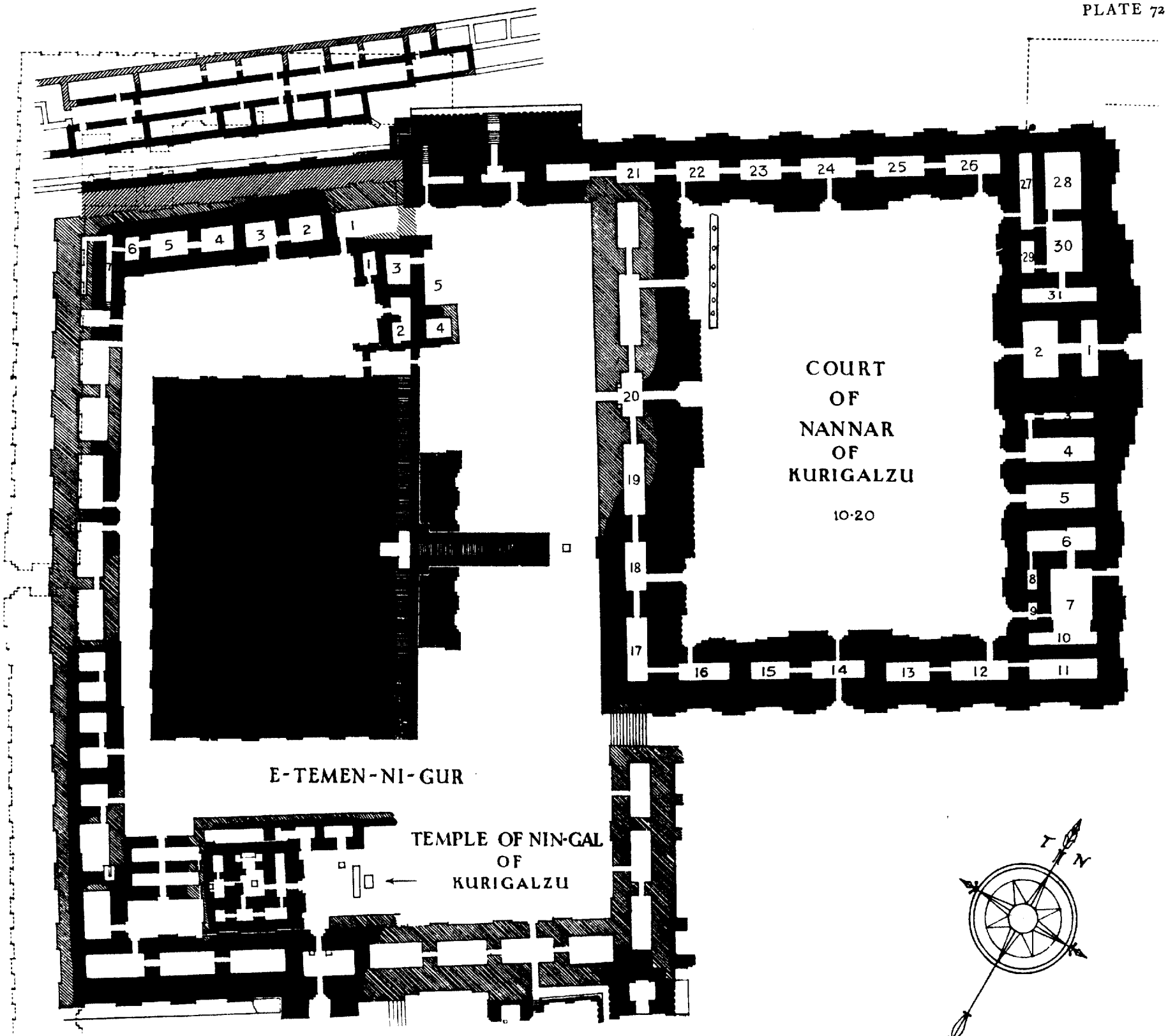
FEBRUARY 1932.

J CRUIKSHANK ROSE A R I B A MENS ET DELT

THE ZIGGURAT TERRACE

THE BASTION OF WARAD-SIN

(See p. 42)



THE ZIGGURAT TERRACE

KASSITE PERIOD . C·1400·B·C.

SCALE OF METRES

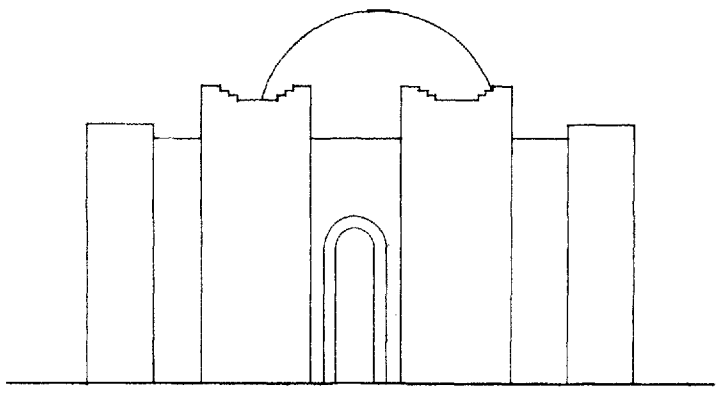
10 0 10 20 30 40 50 60 70 80 90 100

(See p. 48)

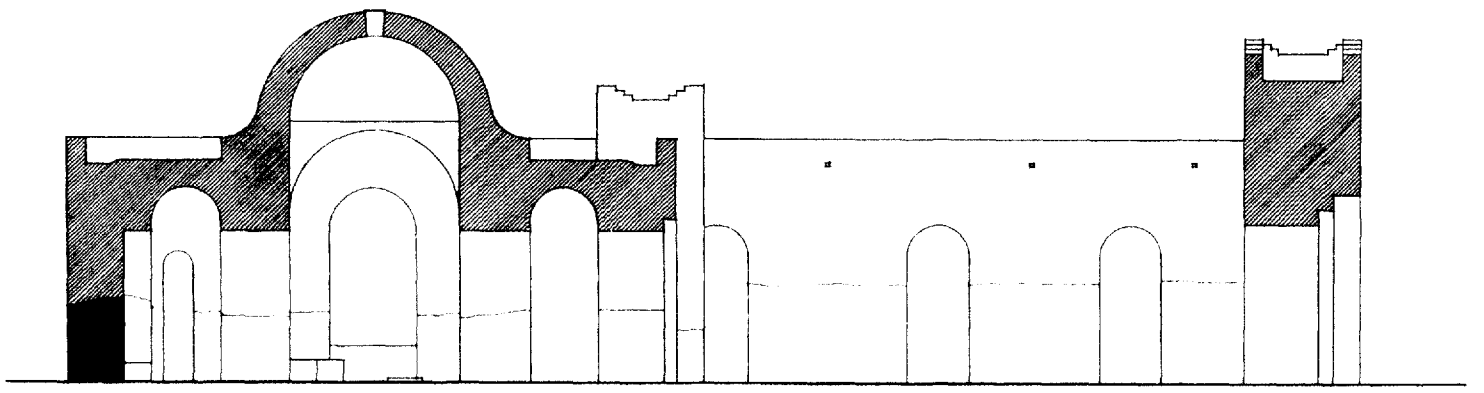
F·G·NEWTON.
A·S·WHITBURN. *A.R.I.B.A.*
C·L·WOOLLEY. *Hon. A.R.I.B.A.*

MENS ET DELT · · 1922 – 1930.

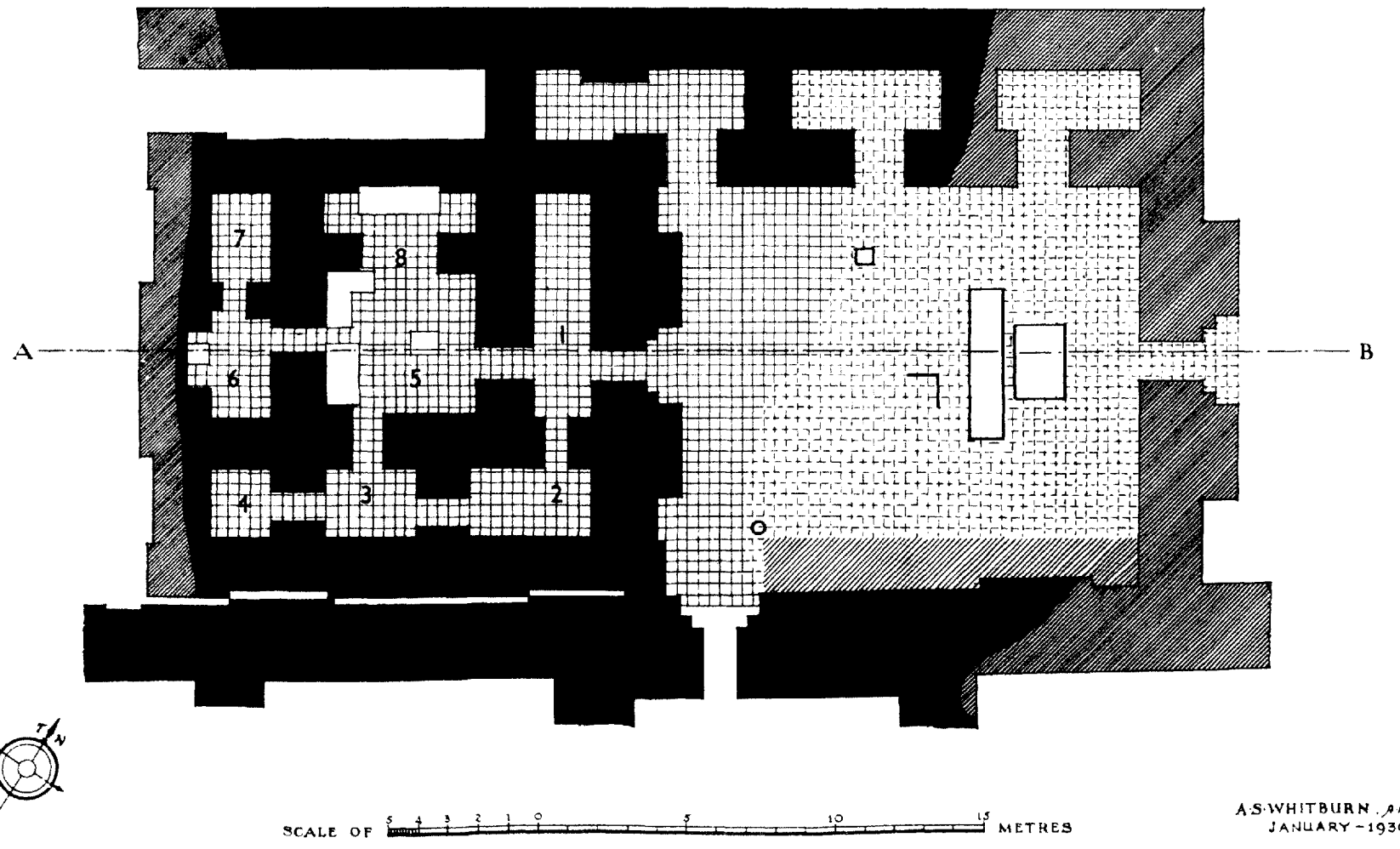
TEMPLE OF NIN-GAL
OF
KURIGALZU C.1400·B·C.
—RESTORED—



ELEVATION TO COURTYARD

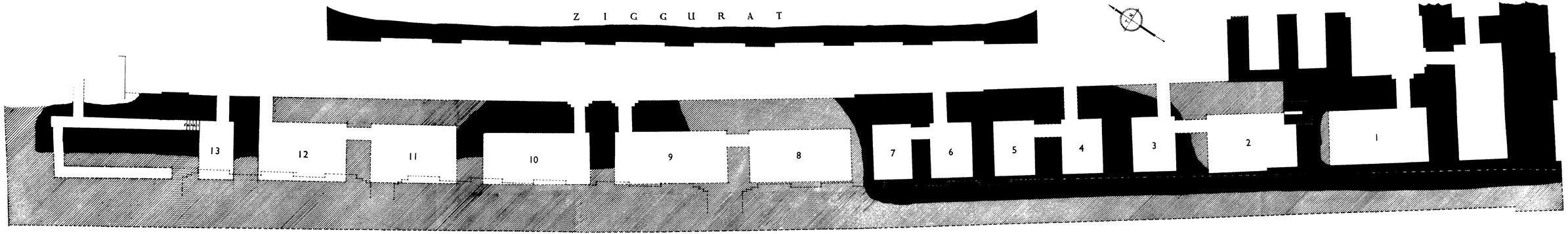


SECTION ON LINE A.B.



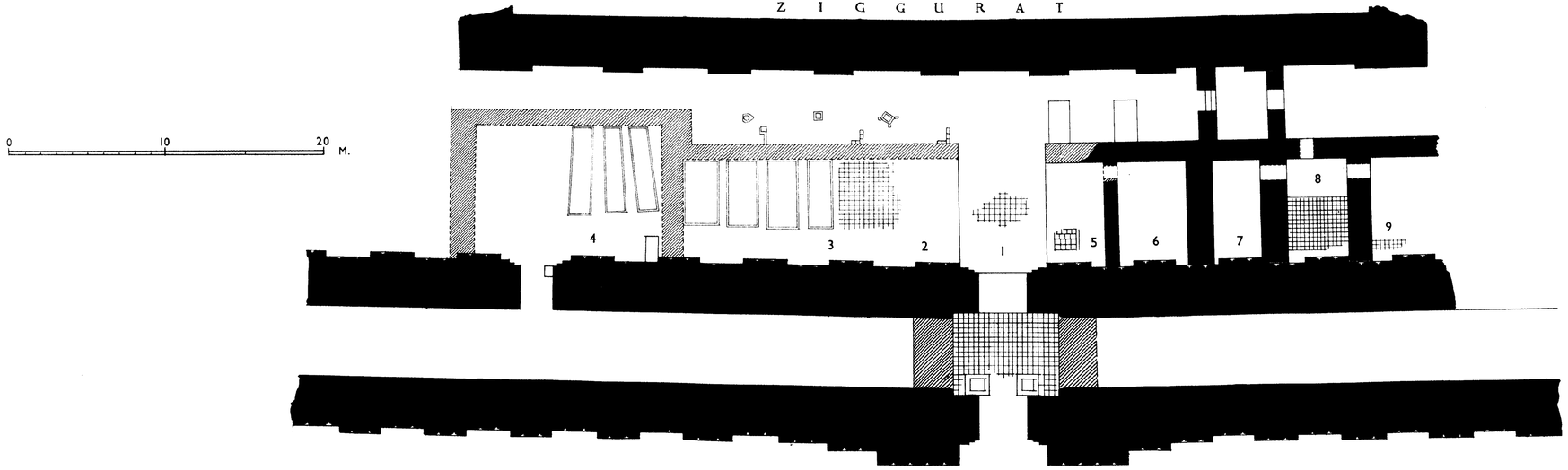
A·S·WHITBURN, ARIBA
JANUARY–1930

(See p. 53)



a. PERIOD OF KURIGALZU.

(See p. 51)

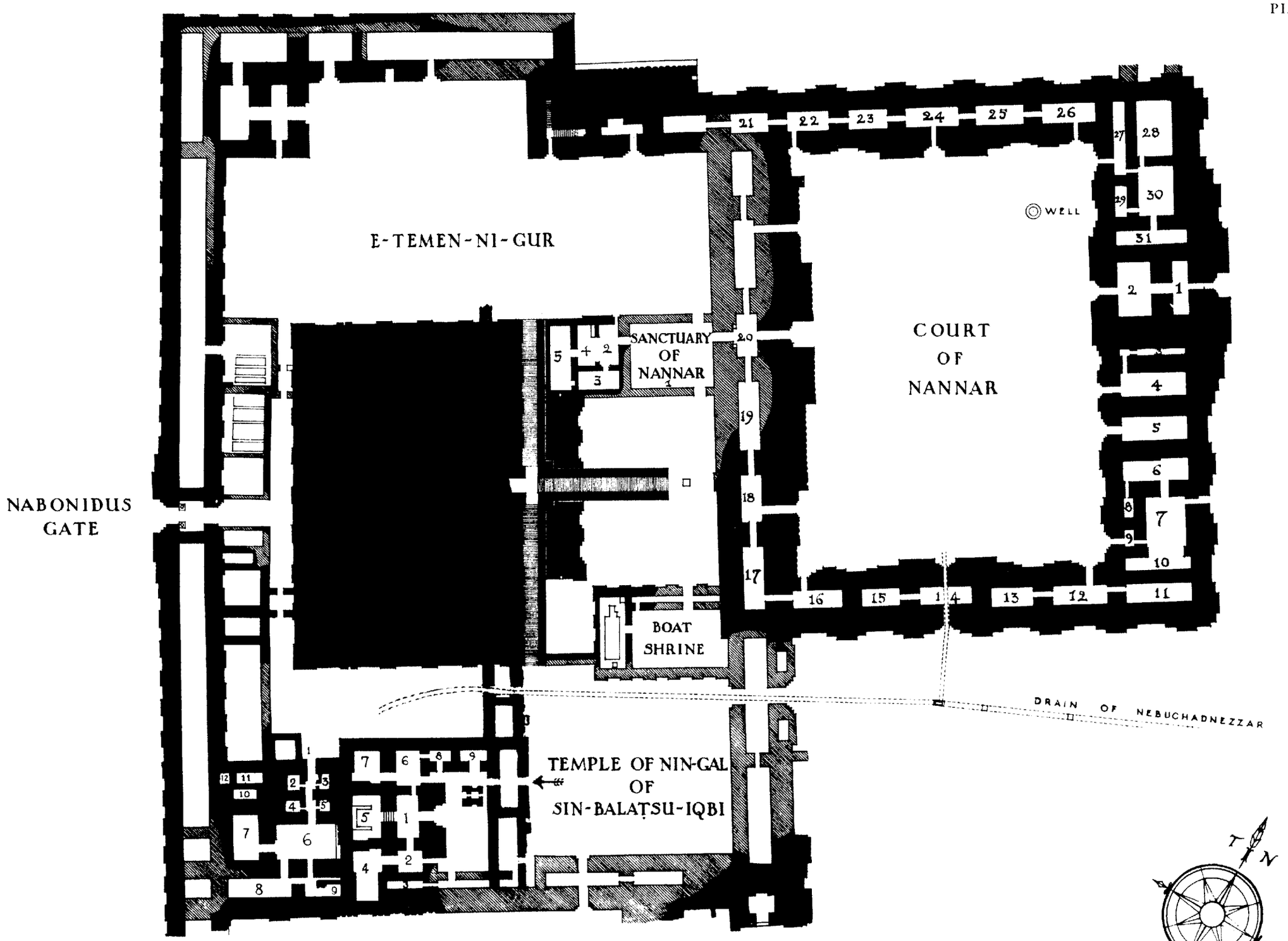


b. NEO-BABYLONIAN PERIOD.

(See p. 71)

BUILDINGS ON S-W SIDE OF ZIGGURAT.

F. G. NEWTON
A. S. WHITBURN, A.R.I.B.A.
C. L. WOOLLEY, HON. A.R.I.B.A.
} MENS. ET DELT.



THE ZIGGURAT TERRACE

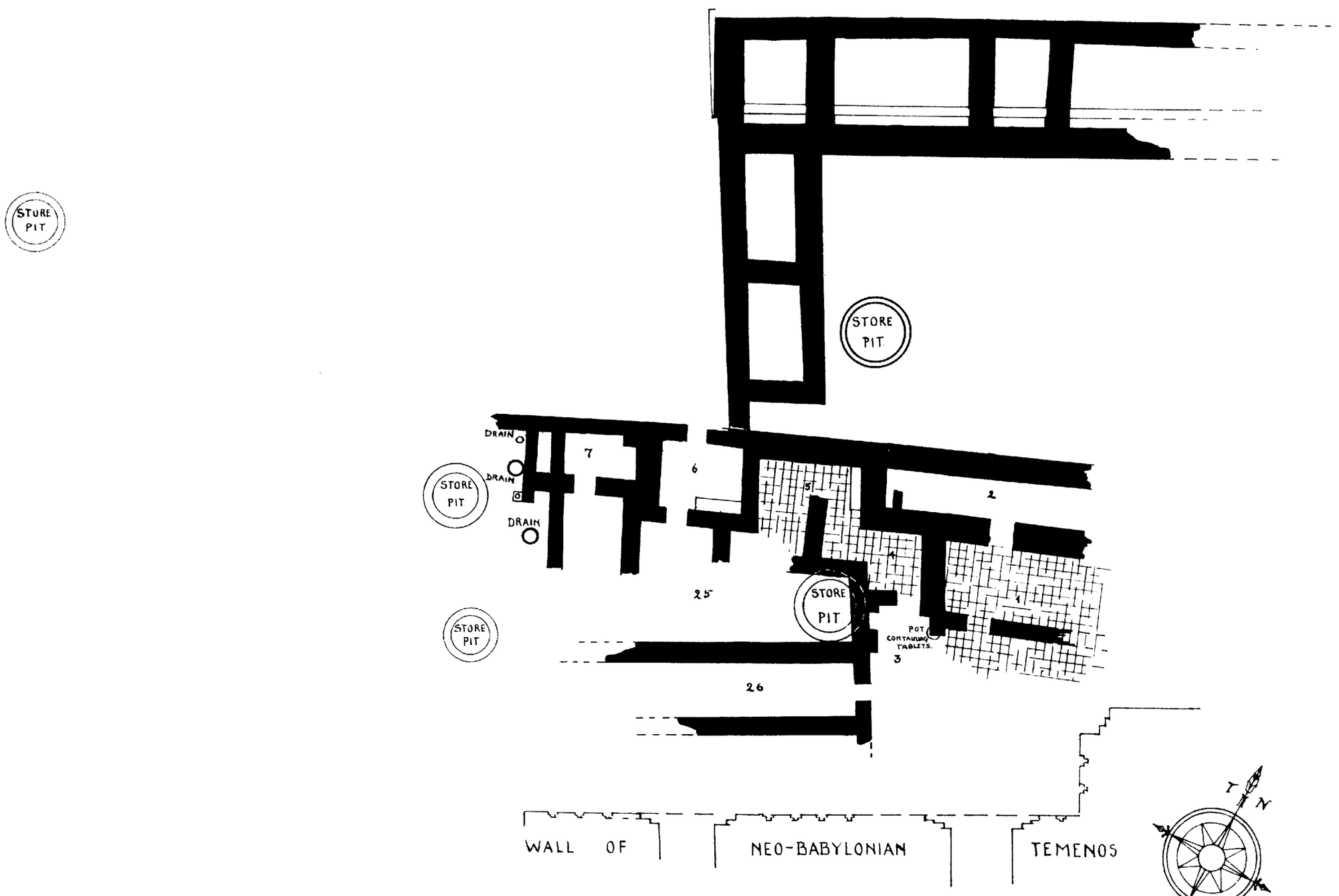
NEO-BABYLONIAN PERIOD . C·550·B·C.

SCALE OF METRES

10 0 10 20 30 40 50 60 70 80 90 100

(*See p. 59*)

F·G·NEWTON.
A·S·WHITBURN. *ARIBA*
C·L·WOOLLEY., *Hon: A·R·I·B·A.*
MENS ET DELT · · 1922 – 1930.



THE ZIGGURAT TERRACE
NW OF ZIGGURAT

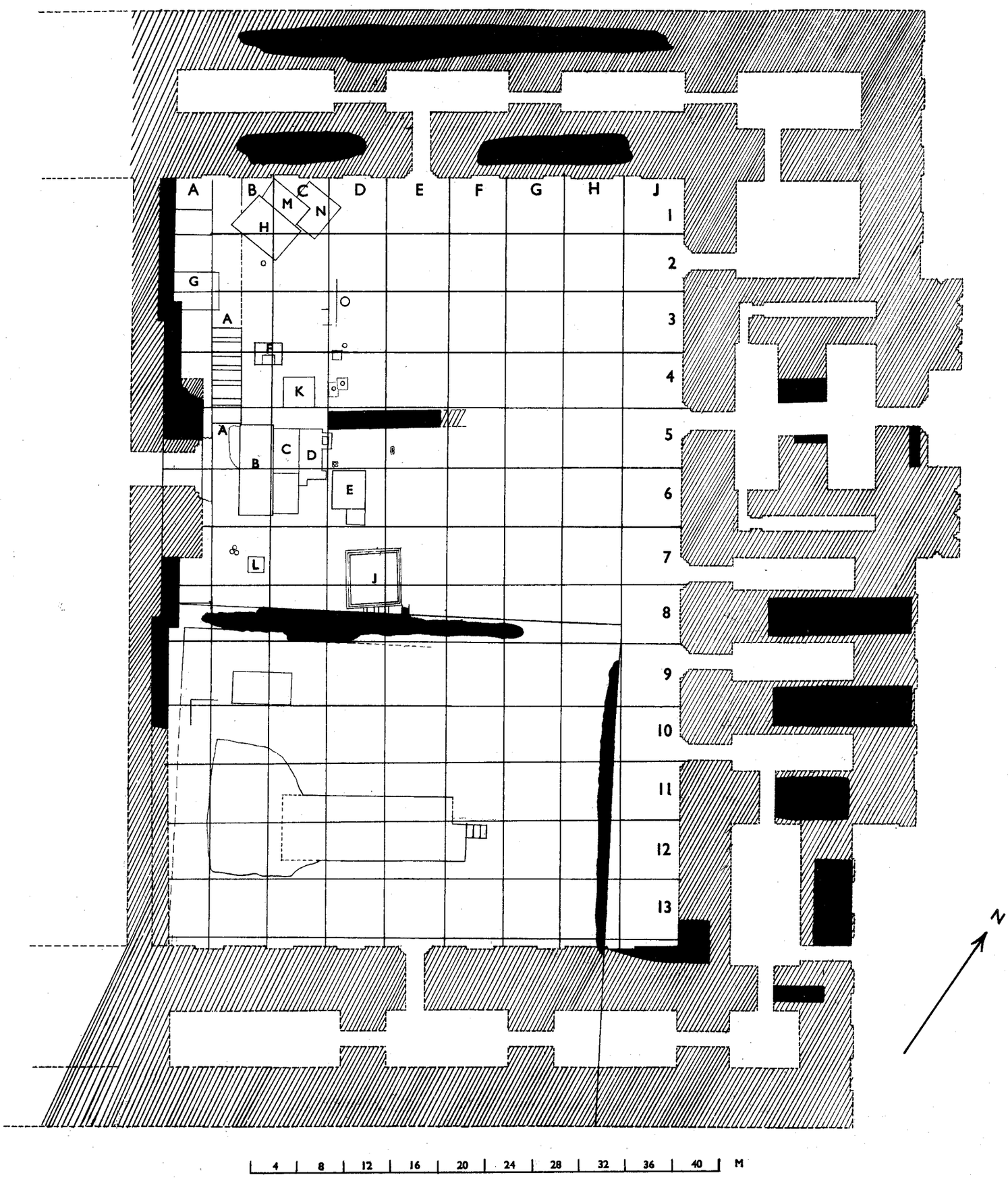
THE PERSIAN REMAINS

Scale 1 to 150

(See p. 144)

C·L·WOOLLEY. . Hon: A.R.I.B.A.

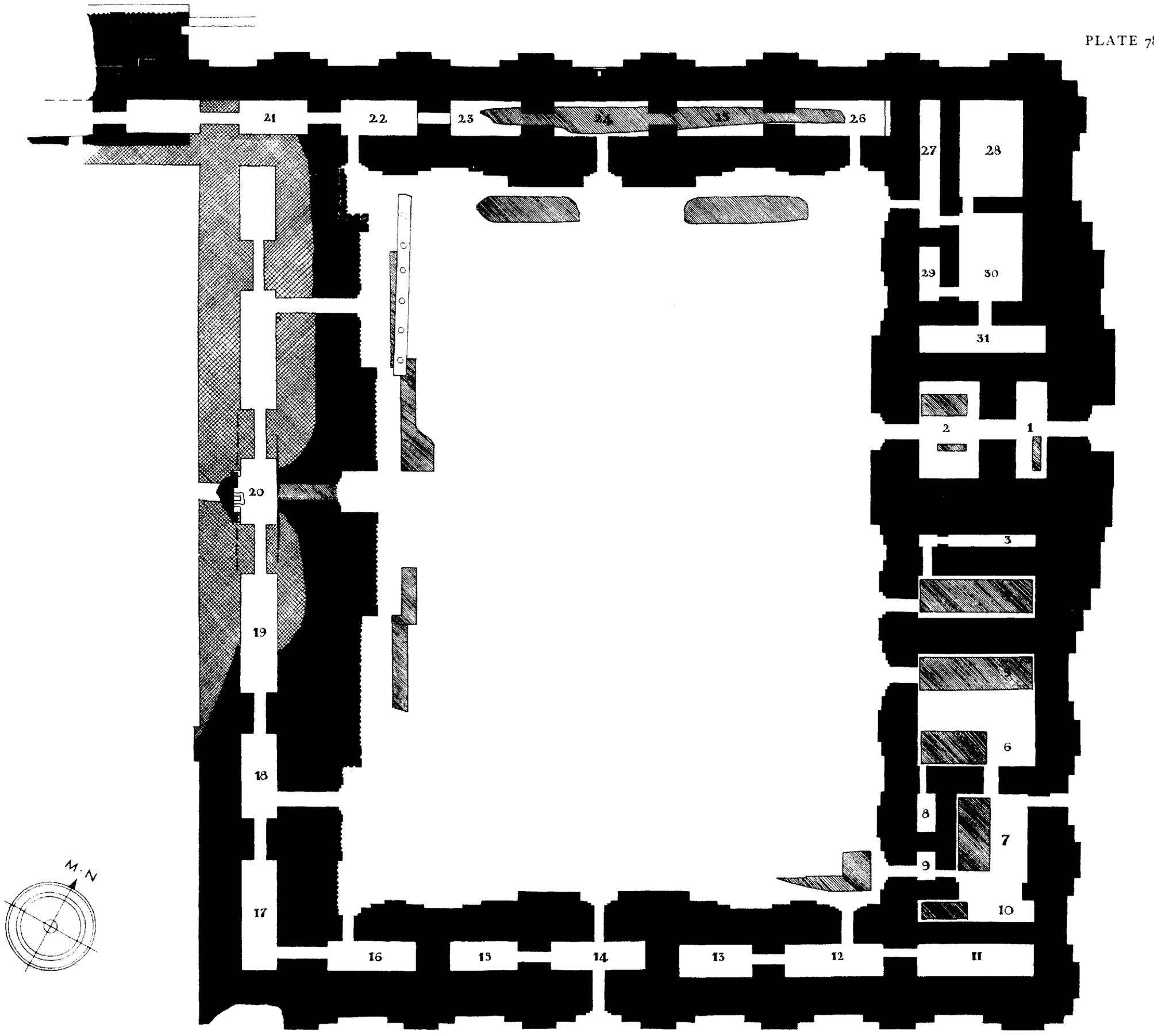
MENS ET DELT



THE NANNAR COURT IN THE THIRD DYNASTY

RECONSTRUCTED PLAN (SHOWING ALSO LARSA DETAILS)

(*See p.* 74)



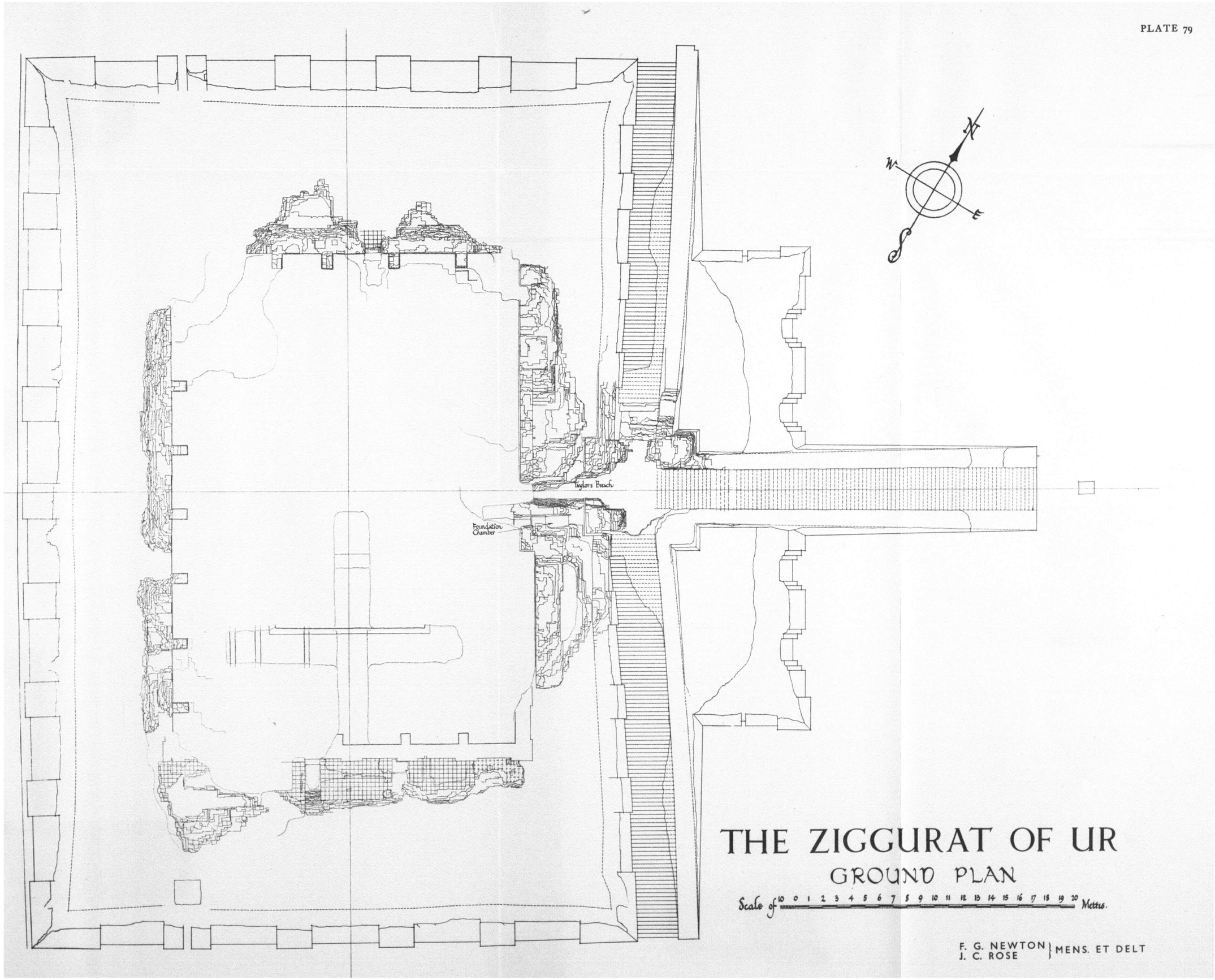
SCALE 0 5 10 20 30 40 METRES

F. G. NEWTON
C. L. WOOLLEY, Hon. A.R.I.B.A. } MENS. ET DELT.

THE NANNAR COURT IN THE KASSITE PERIOD

(THE THIRD DYNASTY WALL-REMAINS ARE SHOWN IN SINGLE HATCHING)

(*See pp. 76 and 88*)

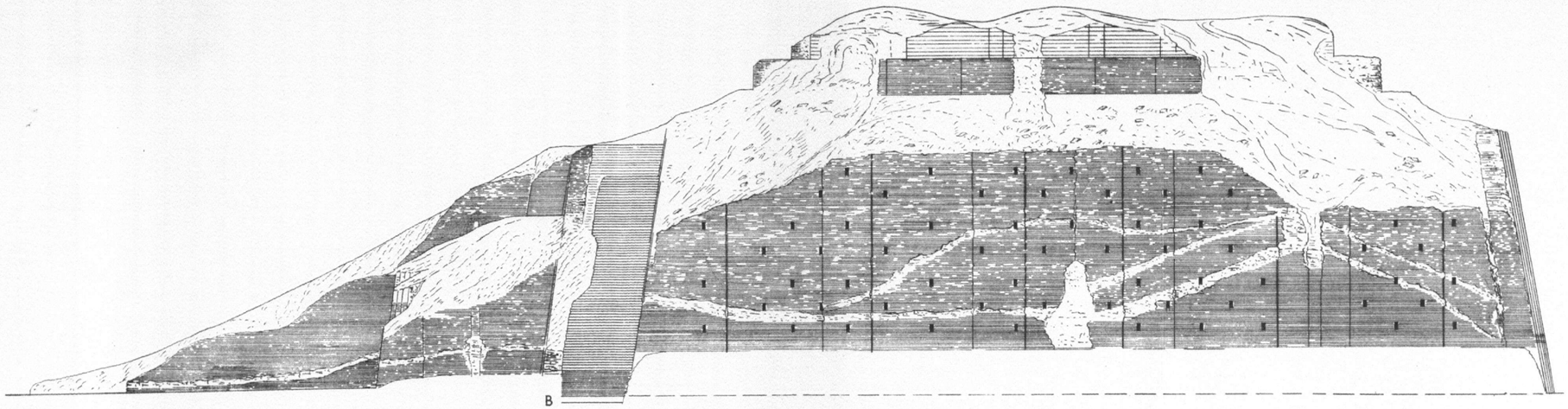


THE ZIGGURAT OF UR

GROUND PLAN

Scale of 10 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 Metres.

F. G. NEWTON
J. C. ROSE } MENS. ET DELT

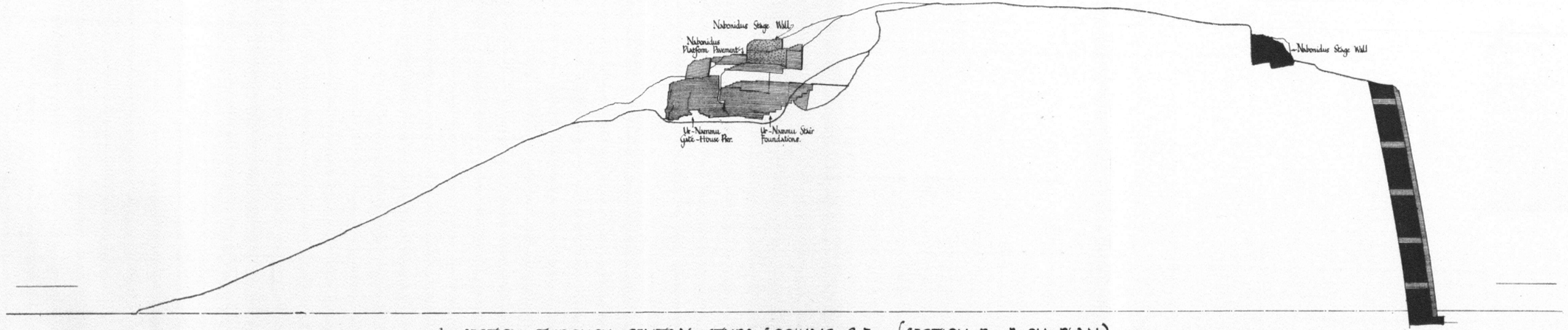


a. NORTH-WEST ELEVATION.

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

SCALE OF METRES

F.G. NEWTON.
Mens. et delt. 1923.

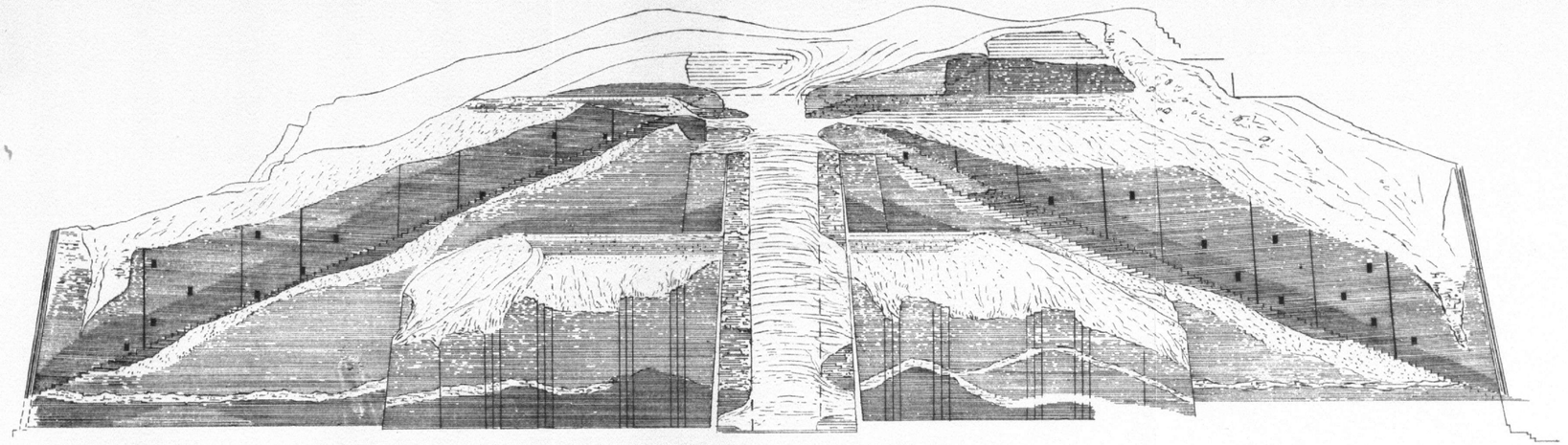


b. SECTION THROUGH CENTRAL STAIRS LOOKING S.E. (SECTION B—B ON PLAN.)

M 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 M

J. C. ROSE: MENS. ET DELT.

THE ZIGGURAT OF UR

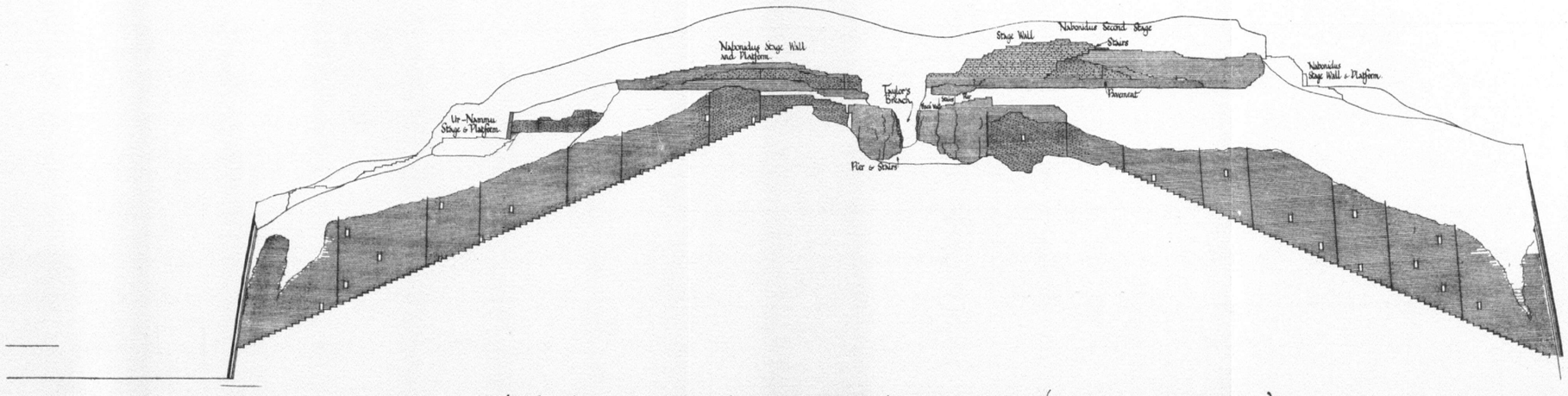


a. NORTH-EAST ELEVATION.

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

SCALE OF METRES

E G. NEWTON
Mens. et delt. 1928.

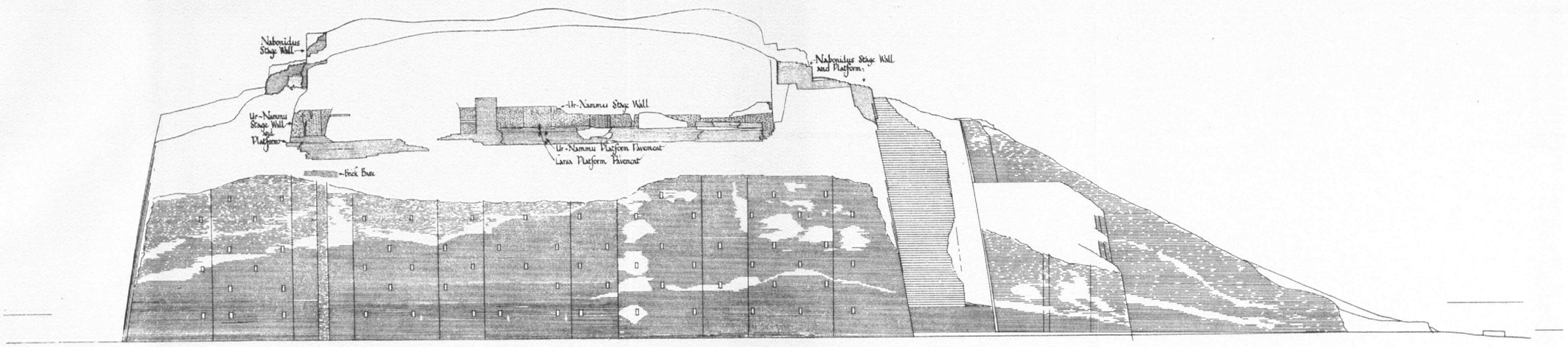


b. SECTION THROUGH LATERAL STAIRS LOOKING S.W. (SECTION C–C ON PLAN.)

M 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 M

J. C. ROSE: MENS. ET DELT.

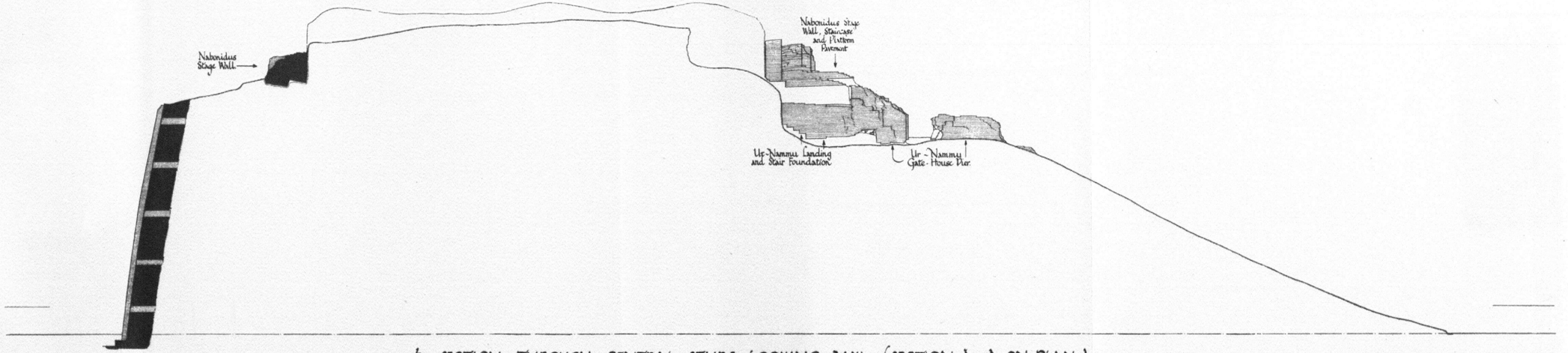
THE ZIGGURAT OF UR



a. SOUTH-EAST ELEVATION.

M 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 M

F. G. NEWTON & J. C. ROSE: MENS. ET DELT.

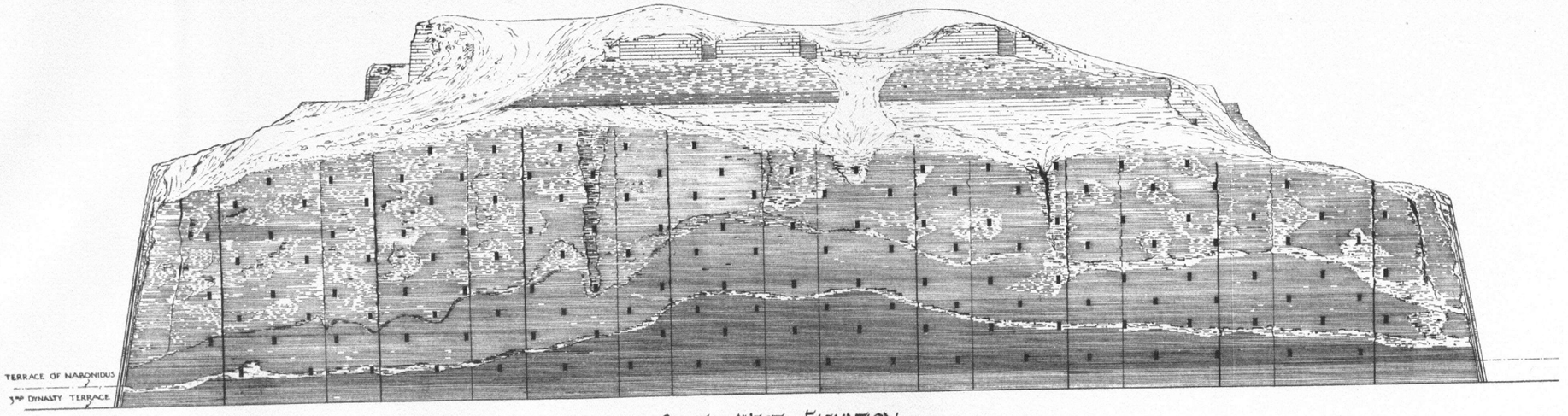

Nabonidus Stage Wall
Nabonidus Stage Wall, Staircase and Platform Pavement
Ur-Nammu Landing and Stair Foundation
Ur-Nammu Gate-House Pier

b. SECTION THROUGH CENTRAL STAIRS LOOKING N.W. (SECTION A–A ON PLAN.)

M 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 M

J. C. ROSE: MENS. ET DELT.

THE ZIGGURAT OF UR

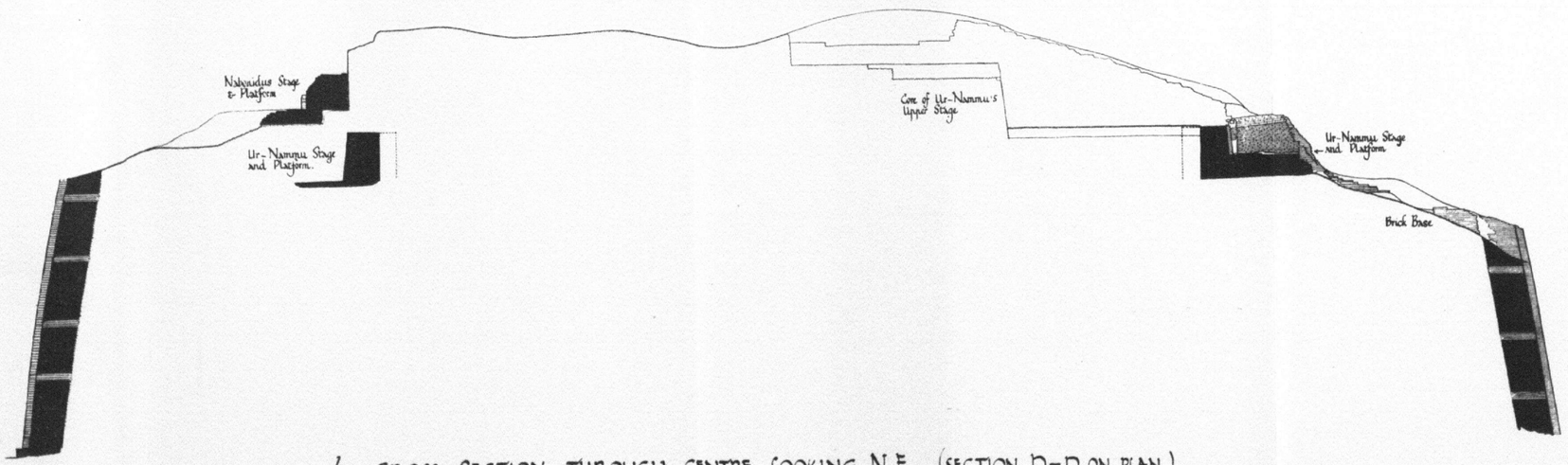


a. SOUTH-WEST ELEVATION.

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

SCALE OF METRES

F. G. NEWTON
Mens. et delt. 1923.

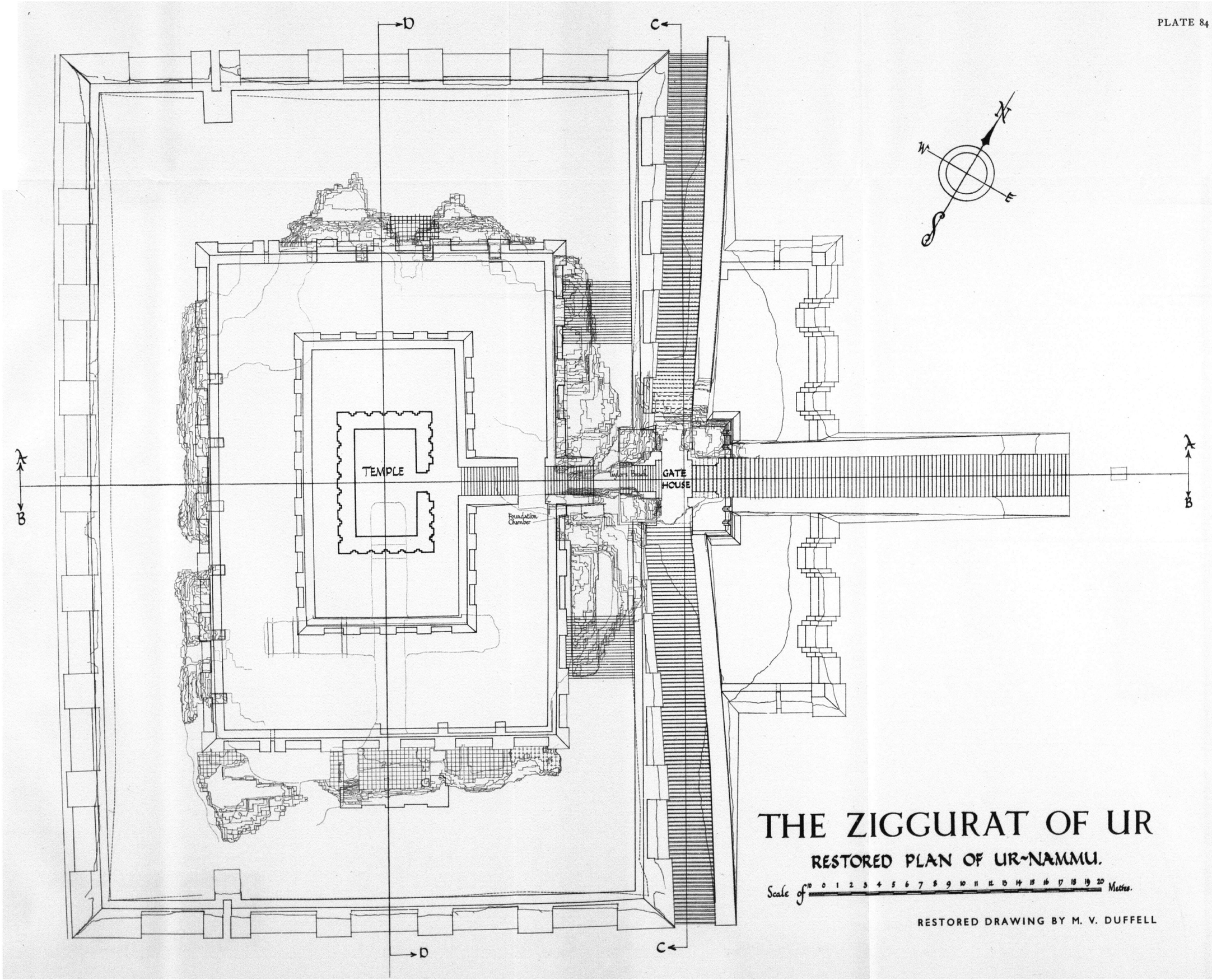


b. CROSS SECTION THROUGH CENTRE LOOKING N.E. (SECTION D-D ON PLAN.)

M 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 M

J. C. ROSE: MENS. ET DELT.

THE ZIGGURAT OF UR

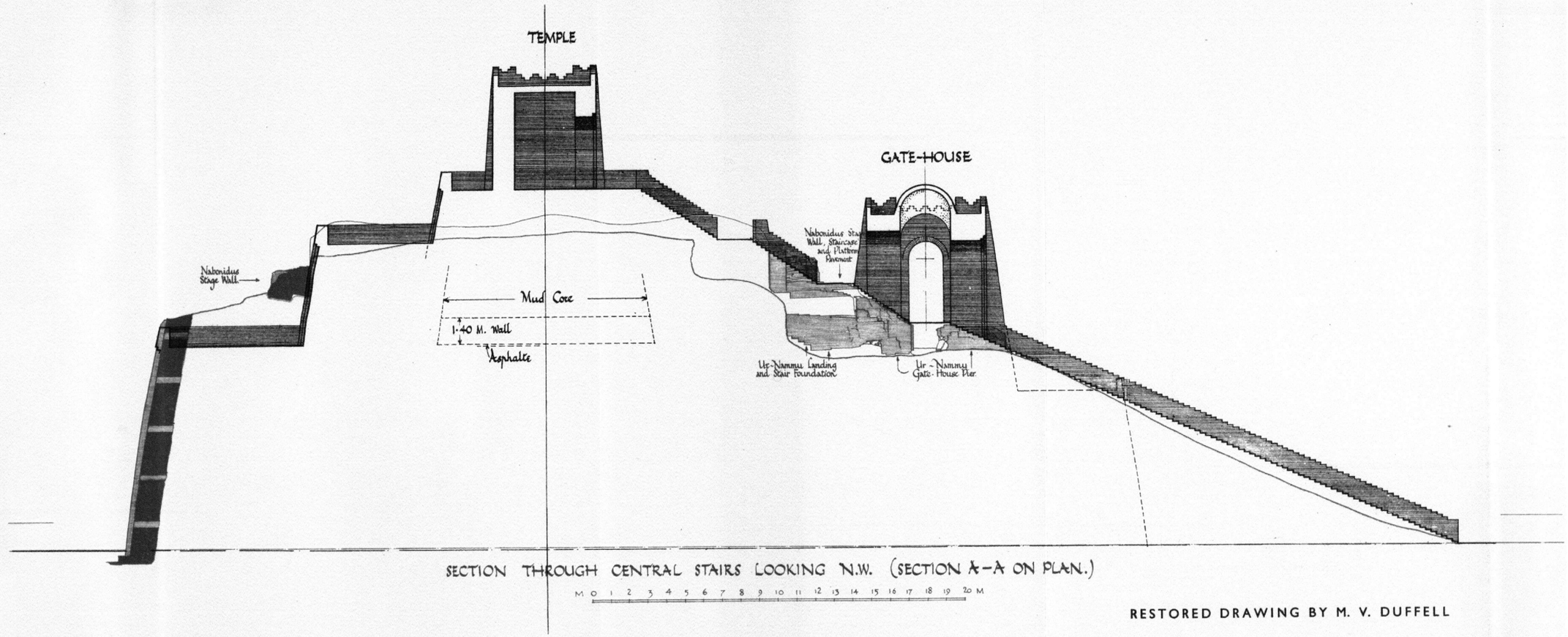


THE ZIGGURAT OF UR

RESTORED PLAN OF UR-NAMMU.

Scale of 10 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 Metres.

RESTORED DRAWING BY M. V. DUFFELL


TEMPLE
GATE-HOUSE
Nabonidus Stage Wall
Nabonidus Stage Wall, Staircase and Platform Pavement
Mud Core
1·40 M. Wall
Asphalte
Ur-Nammu Landing and Stair Foundation
Ur-Nammu Gate-House Pier
M 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 M

SECTION THROUGH CENTRAL STAIRS LOOKING N.W. (SECTION A–A ON PLAN.)

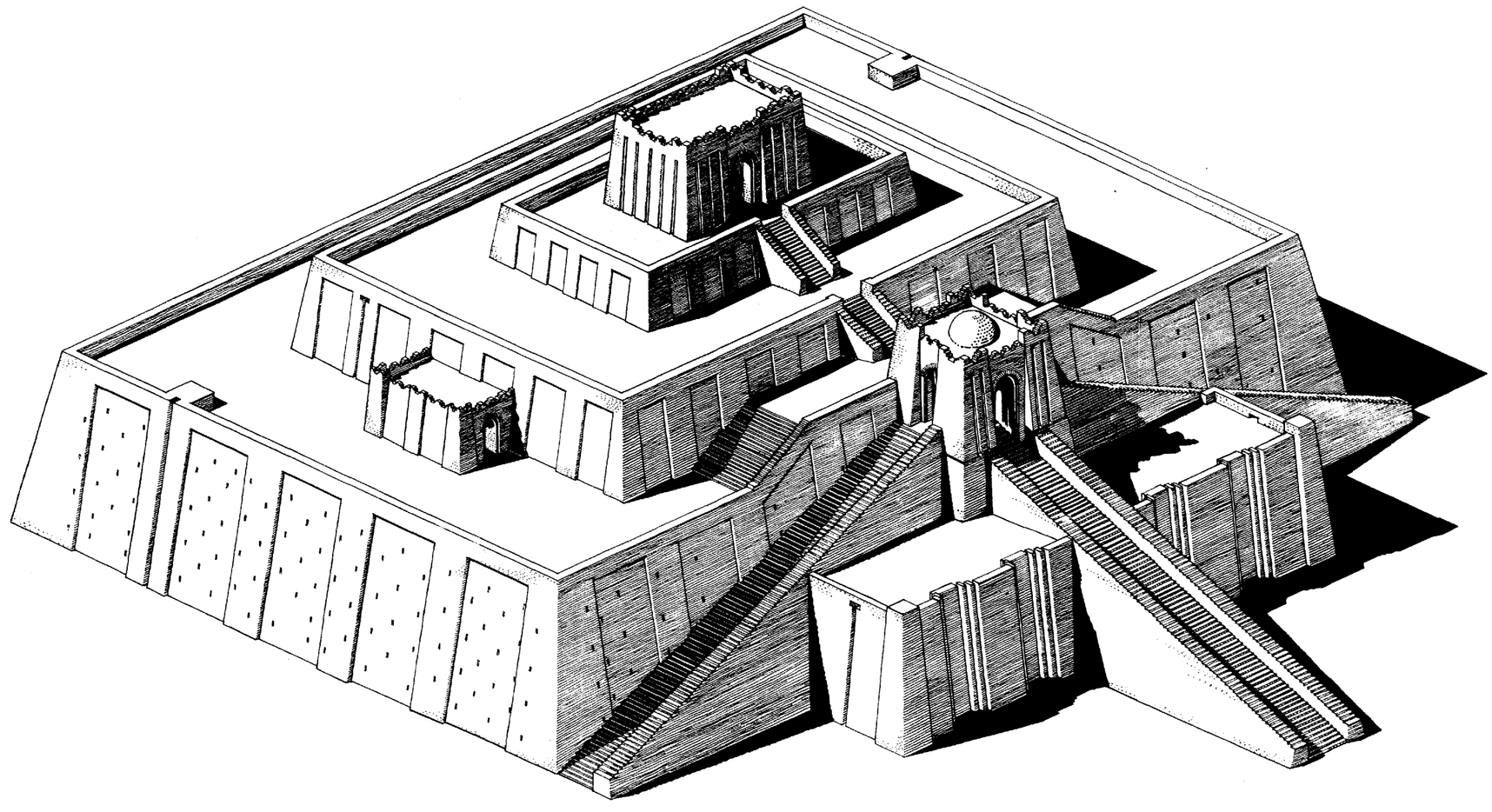
RESTORED DRAWING BY M. V. DUFFELL

THE ZIGGURAT OF UR

THE BUILDING OF UR-NAMMU, RESTORED

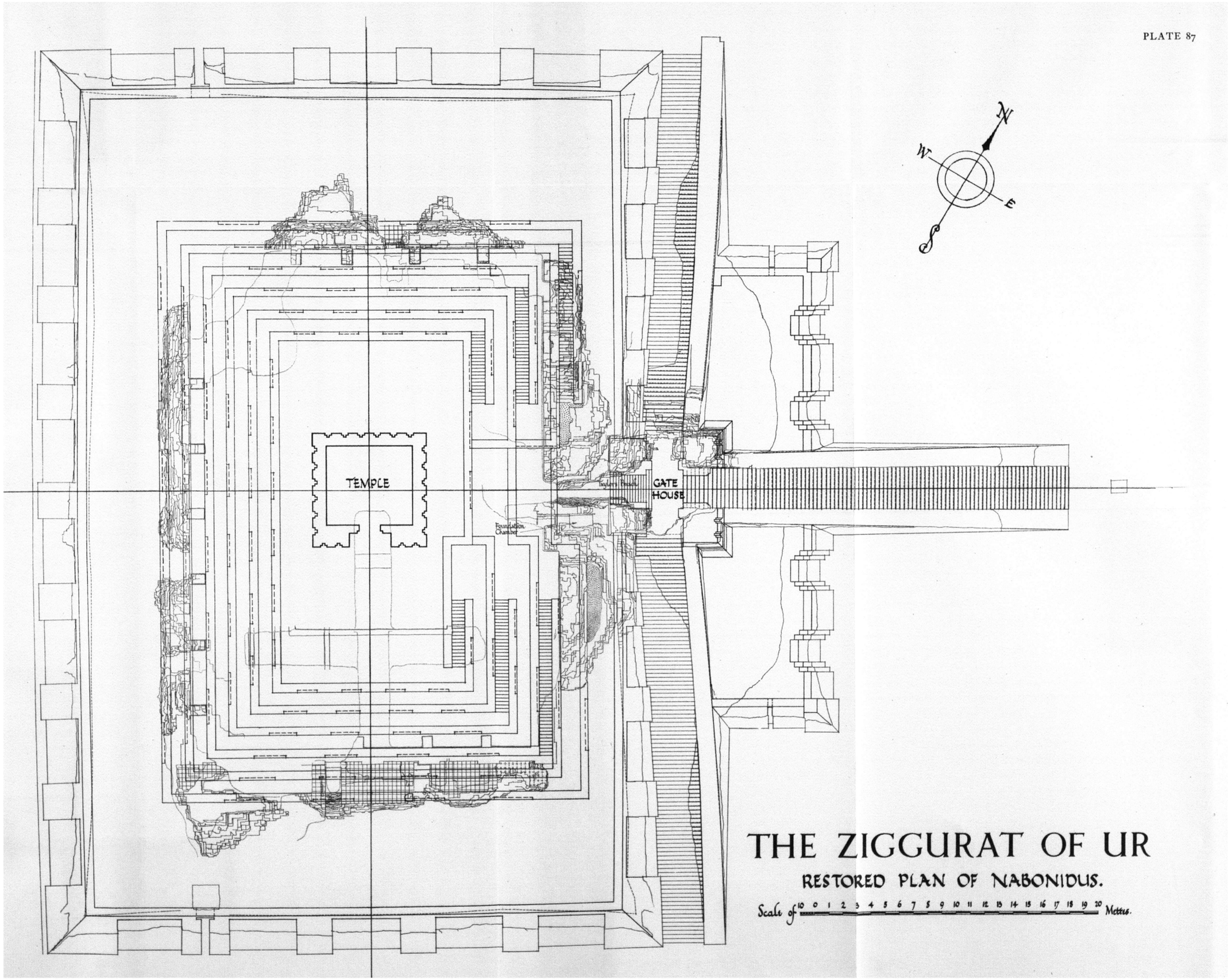
THE ZIGGURAT OF UR-NAMMU RESTORED.

Isometric Projection



Scale of 10 9 8 7 6 5 4 3 2 1 0 5 10 20 30 40 50 60 70 *metres.*

MARJORIE V. DUFFELL *delt.* 1937.



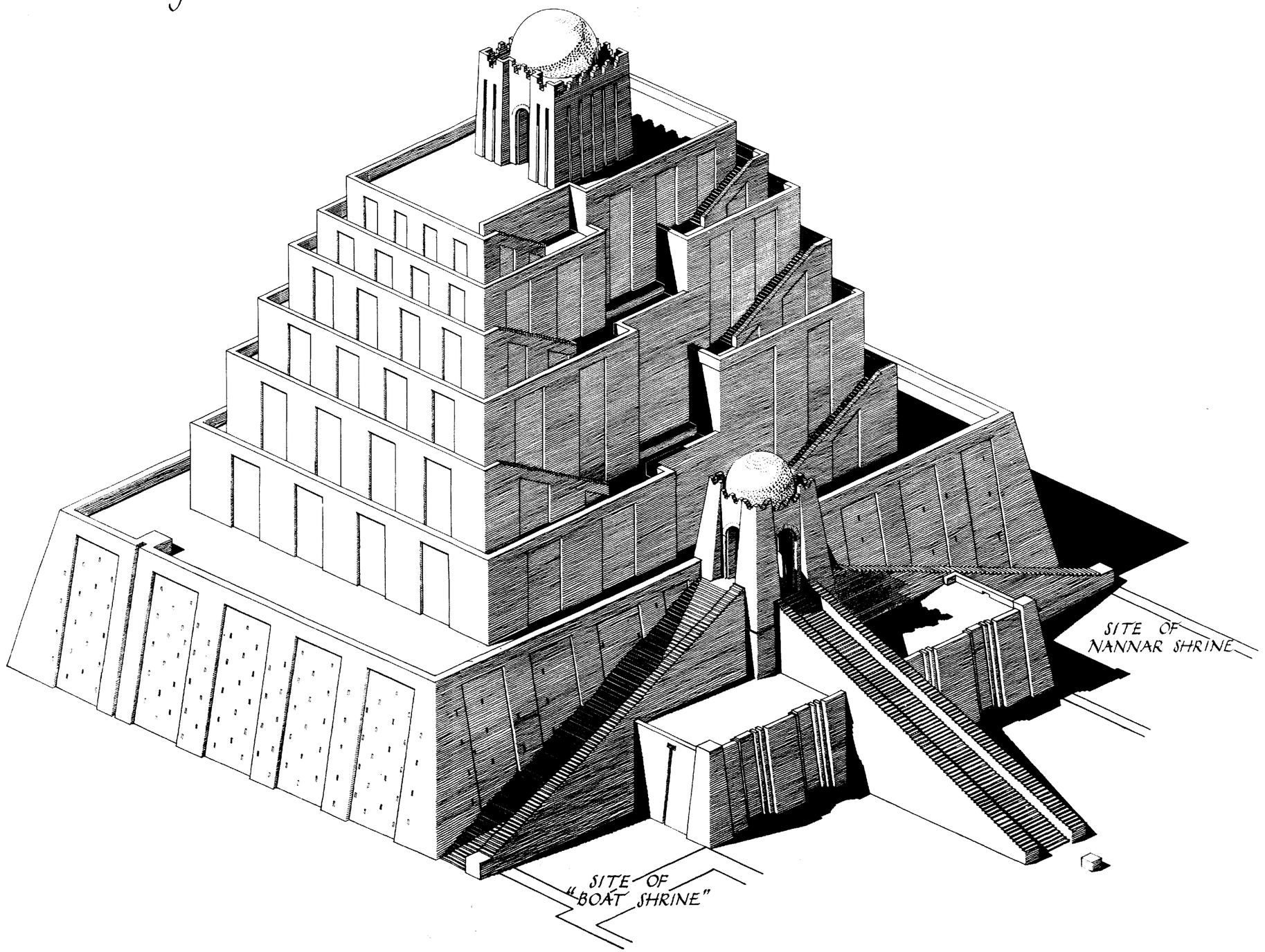
THE ZIGGURAT OF UR

RESTORED PLAN OF NABONIDUS.

Scale of 10 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 Metres.

THE ZIGGURAT OF NABONIDUS RESTORED.

Isometric Projection



Scale of 10 9 8 7 6 5 4 3 2 1 0 5 10 20 30 40 50 60 70 metres.

MARJORIE V. DUFFELL. Dec. 1937